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Report of the Friends of the Chair of the Statistical Commission

Note by the Secretary-General

1. The Secretary-General has the honour to transmit to the Statistical Commission a report prepared by the Friends of the Chair of the Statistical Commission, entitled "An assessment of the statistical criticisms made by the *Human Development Report, 1999*", which is contained in the annex. The report was presented to the Bureau of the Commission in accordance with a request of the Statistical Commission at its thirty-first session.[1] The Bureau decided to transmit the report to the Commission for its review.

Points for discussion

2. The Commission may wish to endorse the report.

Notes

[1] *Official Records of the Economic and Social Council, 2000, Supplement No. 4* (E/2000/24), para. 42.

* E/CN.3/2001/1.

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Annex

An assessment of the statistical criticisms made of the Human Development Report, 1999

Report of the Friends of the Chair of the Statistical Commission

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I. Background

1. At the thirty-first session of the Statistical Commission, a room document submitted by Ian Castles (Australia) was considered, containing a number of criticisms of the statistical content of the 1999 issue of the *Human Development Report (HDR)*, published under the aegis of the United Nations Development Programme (UNDP). The Commission recognized the importance of the *Human Development Report* and its impact on public and governmental awareness of human development issues, and also recognized that the criticisms were of sufficient weight to justify that the Commission consider their validity.

2. Accordingly, the Commission approved the formation of a small group, the Friends of the Chair of the Statistical Commission, to advise its Chair on the issues. The precise terms of reference of the group were as follows:

> "Without being able to directly verify the findings of Mr. Ian Castles of Australia during its thirty-first session, the Statistical Commission took note of his report on the *Human Development Report*. The Commission is very concerned to ensure that the *HDR* is based on valid statistical evidence. The Commission, therefore, requests its Chairman to appoint a small group of statistical experts to prepare, in conjunction with UNDP, a report on the accuracy of the statistical information in the *HDR*, focusing on the points raised by the room document authored by Mr. Castles. The group should report to the Bureau not later than June 2000.
>
> "The Commission authorizes the Bureau to take whatever follow-up steps it deems necessary."

3. Members of the group:

Ian Macredie (Canada), Chair

Lamine Diop (Senegal, representing Afristat)

Tim Holt (United Kingdom)

Beat Hulliger (Switzerland, representing the International Statistical Institute)

Ko Oudhof (Netherlands)

N. S. Sastry (India)

4. The group has considered the room document written by Mr. Castles (appendix I) together with related background documents. It has also considered a written response provided by the Human Development Report Office (HDRO) (appendix II). The group has benefited from further discussions and additional written material provided by all concerned, including feedback on the group's draft report.

5. The group would like to express its appreciation for this most helpful supplementary material. However, the group takes responsibility for the final contents of the present report.

6. It has not been our purpose to carry out a full assessment of all aspects of the statistical underpinning of the 1999 *HDR*. Our terms of reference relate specifically to the criticisms made by Mr. Castles of the 1999 *HDR*. We concentrated on the statistical content and implications of his statements. We decided that we should take a fairly broad interpretation of the term "accuracy". We started from the

concept associated with the measurement of data quality, which defines "accuracy" as "fitness for purpose". In other words, are the data chosen for the *HDR* appropriate in light of the objectives of the application and given any alternatives? Have the limitations of the data been appropriately considered and communicated to the readers of the *HDR*? Are the statistics from member countries sufficiently comparable to support the conclusions drawn or to be combined into aggregates for groups of countries, regions or the whole world?

7. In addition, although the terms of reference relate to the 1999 *HDR* where we have recommendations to make we have tried to frame these in a way that would assist the production of future reports.

II. Introduction

8. The promotion of human development worldwide is a fundamental issue for the United Nations. Seeking to ensure that all peoples have adequate and improving living standards and a share in the world's economic growth and social progress, and that the human potential of the world's population is more fully realized is a basic objective. Hence, the importance of monitoring human development and providing statistical measures to support this aim is beyond doubt. To this end, the *Human Development Report* has been published annually since 1990 and has served to focus the world's attention on progress in human development and the continuing inequalities that exist. It is widely recognized and because of its very high profile it may well be a catalyst for action.

9. Each *HDR* has contained a wide range of statistical measures related to different aspects of human development and these have become richer and more comprehensive over time. At the time the criticisms were made, the 1999 *HDR* was the most recent and most comprehensive in this series. During the period of our review, the 2000 *HDR* was published, although we have not included 2000 *HDR* as a source for our work. Each *HDR* since the first in 1990 has presented statistical information on human development and has adopted a different theme in order to highlight different facets of human development and to draw attention to these.

10. Our concern is not to question the nature and focus of the reports. That is a matter for the judgement of the Human Development Report Office and its advisers. Rather, we focus on the use of statistics within the 1999 *HDR* (within our terms of reference). In our view, the issue of measuring human development is so important that it must be supported by the strongest statistical practice — anything less is to fail the peoples of the world. Policies for human development should be based on the best possible evidence, rigorously compiled and used with integrity to inform the world's policy makers.

11. We are conscious that the *HDR* is heavily dependent on data supplied by Member States to other international agencies and that the agencies, in turn, supply these to HDRO. Hence, the quality of the base data is dependent on the quality assurance processes carried out in these agencies. Quality assurance of the way these data are used within the *HDR* to construct indexes and to support the *HDR* text is, however, the direct responsibility of HDRO. Some of our recommendations are intended to reinforce the strength of HDRO in this respect, and we are aware that this will carry resource implications. In our view, this strengthening is essential but can be supplemented by the knowledge about data quality available within other

agencies. This knowledge can inform HDRO staff about the way the data should be used in the *HDR* and it should be exploited more fully. **This calls for a stronger and more regular interaction between HDRO staff and these agencies and we recommend (see para. 69, recommendation 6) that HDRO staff seek to establish this.**

12. In our view, the basic data used to monitor human development should be as consistent as possible across the various international agencies involved in producing reports on human development or closely related issues. We note, for example, that the countries to be included under the heading "least developed countries" vary from one international agency to the next. This is clearly not the responsibility of any one agency, but it would benefit from stronger coordination of the international agencies involved. Although it is beyond our terms of reference to make any recommendation on this issue, we hope that the Administrative Committee on Coordination takes note of this point.

13. HDRO developed the human development index (HDI) as a principal measure of average human achievements in basic human capabilities. It consists of three components: a long and healthy life (measured by life expectancy at birth), knowledge (measured by adult literacy rate and combined gross enrolment ratio) and a decent standard of living (measured by adjusted gross domestic product (GDP) per capita in purchasing power parities (PPP) dollars). The HDI focuses on human outcomes and is designed to be a more broadly based measure than per capita income in assessing human well being. The composition of the HDI is described in detail in the 1999 *HDR* (pp. 159 and 160).

14. In addition, HDRO has developed a number of complementary indices, including the gender-related development index (GDI) and the human poverty indices (HPI-1 and HPI-2). Over time, the detailed composition of each index has been subject to change and development as methodological advances have been incorporated. These are also described in detail in the 1999 *HDR* (pp. 160-163).

15. We have not questioned the basic structure and purpose of the HDI and the related indices. Whenever one attempts to summarize a complex issue into a single statistical measure or index, one risks oversimplifying or losing deeper understanding. Amartya Sen made the same point in his contribution to the 1999 *HDR*. The criticisms of Mr. Castles in the room document (appendix I) are made within the framework of the *HDR*, the HDI and related indices. We will comment within this framework also.

III. The basis of international comparison

16. At the heart of some of the most important criticisms made by Mr. Castles is the basic question of how to make international comparisons of economic statistics that have been produced for each country. In other words, how do we put into the same unit of measurement the per capita income, economic output or living standards of different countries, each of which will estimate these measures in their own national currencies?

17. This is an important issue that has a profound effect on international comparisons. The 1999 *HDR* claims, for example, that by the late 1990s the fifth of the world's people living in the highest income countries had 86 per cent of world

GDP. Mr. Castles contends that this figure should be 60 to 65 per cent. Similarly, the 1999 *HDR* claims that the gap in per capita income (gross national product (GNP)) between the countries with the richest fifth of the world's population and those with the poorest fifth widened from 30:1 in 1960 to 60:1 in 1970 and 74:1 in 1995. Mr. Castles contends that these figures should be about 12:1 in 1960, 18:1 in 1990 and 16:1 in 1997. Not only are the ratios much smaller according to him but the clear upward trend presented in the 1999 *HDR* figures is not apparent in the measure expressed in PPP dollars.

18. This is such an important aspect of the difference between HDRO and Mr. Castles that we will devote the present section to it before considering each of his specific criticisms in the subsequent sections.

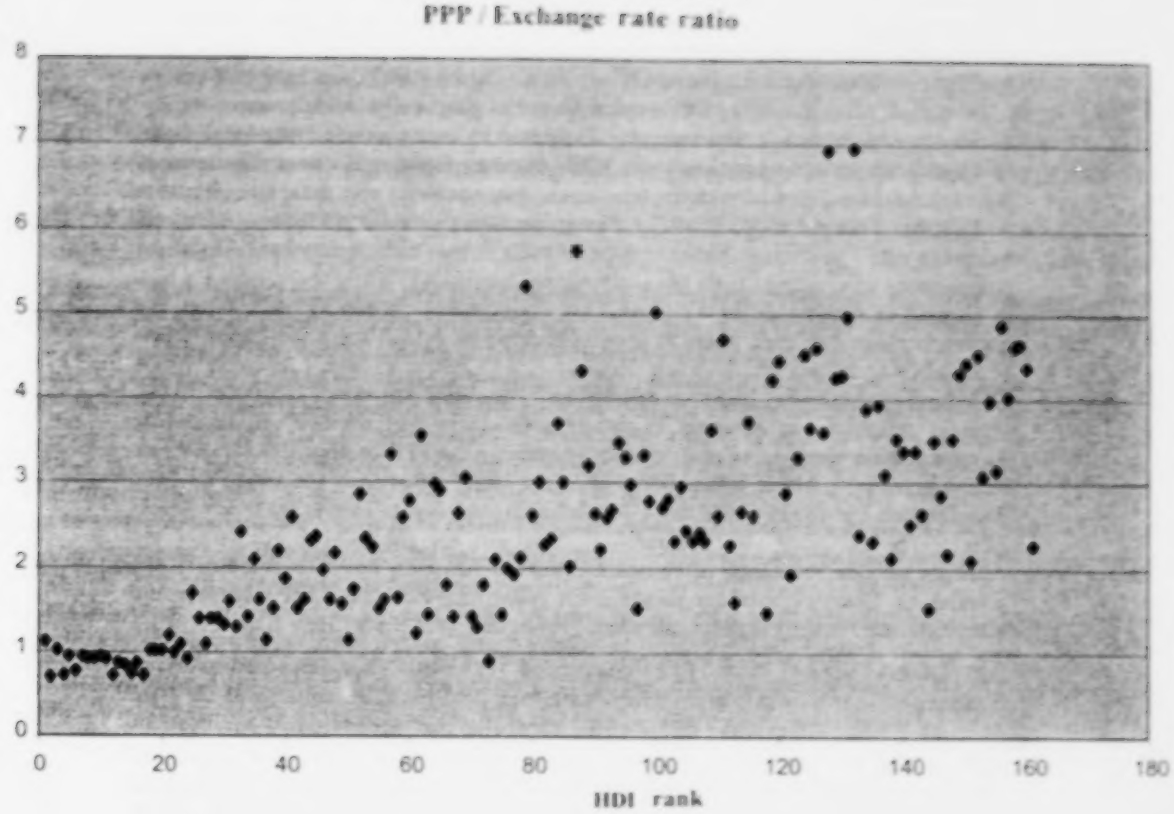
19. The point at issue is whether conversion from national currencies to a common unit (say, United States dollars) should be made using the comparative exchange rate values of different currencies or should be made on the basis of equalizing the purchasing power of the currency.

20. The exchange rate conversion values of any currency are determined by the international financial markets and reflect the market forces in those institutions. Indeed, in the modern world exchange rates are little affected by international trade and the exchange of goods and services in world markets. The second approach uses purchasing power parities to reflect domestic prices on an internationally comparable basis. The value of national income or economic output in any country is equated to others on this basis. In this approach, PPPs provide an international valuation of what the local currency will buy within the country (see United Nations, *Handbook of the International Comparison Programme* and references therein, New York, 1992).

21. Purchasing power parities express the relationship among currencies. As a result, any currency for which PPPs are available can be converted into any other currency for which PPPs are available. For a multi-country comparison, it is necessary to choose a common unit to which all others are converted. Throughout the present report, we shall use US$ as the common unit in which all national measures are expressed. The choice is arbitrary and any other currency could have been used. The choice does not affect the fundamental issues or our conclusions and recommendations.

22. Clearly, given the different figures advanced in paragraph 17 above, the difference between the use of exchange rates or PPPs to convert national measures to a common unit is hardly trivial. Moreover, the difference is reflected in the developed/developing country spectrum. This is shown in the figure, which contains the ratio of PPP to US dollar exchange rate conversion factors for each country plotted against that country's HDI rank. The most industrialized countries occupy the lowest 20 places at the left of the graph. For those countries, the ratio of PPPs to US dollar exchange rate conversion factors is fairly close to 1. However, for less developed countries the ratio is greater — in many cases much greater — than 1. The further to the right a country is on the graph the lower the HDI rank, and the least developed countries are on the far right side. The upwards slope of the plot shows that the ratio of PPPs to US dollar exchange rate conversion is generally larger, the lower the HDI rank. For the least developed countries, the ratio can be as much as 4 or more. Hence, because the ratio is close to 1, a comparison of per capita income, economic output or living standards of the United States and a major

European country, for example, would be fairly similar using either exchange rates or PPP conversions. Even in this case, the ratio can fluctuate over time as exchange rates vary. However, a similar comparison between the United States or any of the most industrialized countries and a least developed country would be very different. In such a case, the conversion of per capita income using, for example, PPP conversion could be as much as four or more times larger than the conversion using exchange rates. Hence, the choice of conversion factor has a significant effect across the developed/developing spectrum, and this relationship has been accentuated in recent times as the US dollar exchange rate has strengthened in comparison with other currencies.



23. The HDRO response to the Castles criticisms (appendix II) acknowledges, in agreement with Mr. Castles and with development economists generally, that for comparative living standards, the use of PPP per capita is better. Indeed, since 1990 this approach has been used in the per capita GDP component of the HDI itself as a proxy for a decent standard of living. In addition, PPP conversion is used in the GDI, the HPI and other measures, such as the gender empowerment measure of the *HDR*. Hence, for the key statistical indicators in the *HDR*, PPP conversion is used.

But for the main headline comparisons of shares of world income that appear in the main text of the *HDR*, and are quoted in paragraph 17 above, US dollar exchange rate conversion is used.

24. However, the HDRO case in support of using exchange rate conversion in the main text has two basic strands. First, notwithstanding the general preference for PPP conversion for comparing living standards, the HDRO contends that the matter is ultimately a matter of economic judgement and not statistical objectivity. Second, the HDRO's focus is on the marginalization of developing countries, and it contends that for this purpose the use of US dollar exchange rates is often more appropriate, as in the 1999 *HDR*, when the main theme was the marginalization of the poorest and least developed countries.

25. In our view, powerful reasons exist for using PPP conversion rather than US dollar exchange rate conversions for real economic (rather than purely financial) phenomena, such as standard of living comparisons (as reflected by per capita GDP) and, by extension, for comparisons of economic output (GDP) and national income (GDP or per capita GDP). We believe that this practice is widely accepted by development economists. The case was illustrated by a submission from Mr. Castles in which a series of comparisons was made between Japan and China. The ratio of per capita consumption of various items in the two countries was presented, together with ratios of the per capita GDP for the two countries based on PPP conversion and exchange rate conversion. We have repeated this analysis for a number of bilateral comparisons of countries from the same region (see table). While the results are not, in general, as striking as for the Japan/China comparison chosen by Mr. Castles, the pattern is clear. For such items as food consumption, which are price inelastic, the bilateral comparisons are relatively close to 1, with countries with higher per capita GDP having somewhat higher consumption. The ratios are much larger for items, such as television or personal computer ownership, that depend on disposable income and are much more price elastic. In general, the PPP comparison for any pair of countries falls within this pattern, having a larger value than the ratios for food consumption but smaller than those for technological items. This is what one would expect. The exchange rate comparisons, however, are generally much larger and often lie outside the range of consumption even for such items as computers and televisions. The PPP measure seems more consistent with the other measures and more relevant for the purposes intended.

26. HDRO accepts that PPP conversion is better for standard-of-living comparisons and uses this in their key indicators. And yet in all editions of the *HDR* (not just 1999), whatever the theme of the particular year, the main text and headline comparisons of shares of world income have been expressed in US dollar exchange rate comparisons. We cannot understand why PPP comparisons do not feature more regularly in the main text and in the headline comparisons if they are, indeed, accepted as the better conversion factor for standard-of-living comparisons.

27. However, HDRO refers to two important shortcomings of PPP conversion use that require a response. The first is the question of quality of the measurement instruments of the basic data, the data collection and the calculation of PPPs. The second is the question of coverage for the countries of the world. We acknowledge the existence of these problems and we do agree that these are both important issues, but they are not in our view of sufficient weight to justify the use of US dollar exchange rate conversion rather than PPP conversion. It is undoubtedly the case that

PPP quality needs to improve, and recent reports have addressed this issue (see OECD, "Review of the OECD-Eurostat PPP Programme", 1997; "Evaluation of the International Comparison Programme (ICP)", Statistical Commission document, 1998; "Observations of the World Bank on the report on the evaluation of ICP", Statistical Commission document 1999). The World Bank has long been an advocate of PPP measures and has done much to improve quality. The Statistical Commission has considered the issue and supported proposals to strengthen the International Comparison Programme. Further quality improvements are needed and we support the appeals to strengthen this programme. However, if PPP conversion is preferred, then the quality issue cannot justify switching from the PPP estimate to a US dollar exchange rate, which can be more than three times smaller for least developed countries. Given such large differences between the two measures, using the wrong measure because it is more accurate does not satisfy a "fitness-for-purpose" criterion. Also, we note that HDRO has used PPP conversion for the 174 countries listed in the tables of the 1999 *HDR* for the calculation of the HDI, GDI, HPI and related indices (we recognize that some of these have been derived by the World Bank from econometric models rather than from direct data collection). If quality is an overriding consideration, it is difficult to reconcile this with the use of PPP conversion in the key indicators of the *HDR*. This use has relevance for the question of coverage also: the 174 countries mentioned represent almost 5.75 billion of the world's population. The 13 additional countries for which only basic indicators are provided are estimated to contain about 70 million people.

28. HDRO maintains that if the emphasis is on marginalization of less developed countries, then US dollar exchange rate conversion is often more appropriate. We know of no clear economic definition of marginalization, but from the text of the *HDR* it relates to access to world trade, take-up of technology, international (multilateral) relations and cooperation etc. This is clearly an important issue and statistical measures that properly capture these aspects would be of great benefit. However, the majority of a country's output flows into domestic consumption, not into world trade, and it is difficult to see the justification on these grounds for converting the whole of a country's GDP on an exchange rate basis. We are not aware of this argument for exchange rate conversion gaining general acceptance in the development economics literature.

29. Nonetheless, there are applications for which exchange rates are appropriate, such as the expression of a country's international debt relative to its GDP. Exchange rates are also relevant for international financial transactions, in particular when countries access goods and services in the international markets since the exchange rate determines the price that must be paid and the cost of imported goods. This will be reflected in the price of these goods in the country — and hence in the PPP comparison — in proportion to the domestic expenditure involved. Hence, in principle at least, the exchange rate impact should be appropriately reflected in the PPP conversion factor. Nevertheless, we acknowledge that the exchange rate may be perceived as a formidable barrier to a country accessing high technology goods and specialized services from industrialized nations. Developing statistical measures relevant to this would be beneficial. But the use of US dollar conversion rather than PPP conversion for per capita GDP and estimates of national income as adopted in the 1999 *HDR* and earlier issues of the *HDR* does not seem the right way to approach this issue.

Table

International comparisons: ratios of per capita measures of output or use of goods and services

Comparison	*Daily per capita supply of calories, 1996*	*Daily per capita supply of fat, total, 1996 (grams)*	*Daily per capita supply of protein, total, 1996 (grams)*	*GDP index*	*TVs, per 1,000 people, 1996*	*Carbon dioxide emissions, per capita, 1996 (tons)*	*Commercial energy use (oil equiv'nt) per capita, 1996 (kilograms)*	*Per capita electricity consumption, 1996*	*Main telephone lines, per 1,000 people, 1996*	*International tourism departures, per 1,000 people, 1996*	*Personal computers, per capita*	***Real GDP per capita, 1997 (PPP$)***	***Per capita GDP, 1997 (US$)***
Japan/China	1.0	1.3	1.3	1.6	2.8	3.3	4.5	9.1	10.9	32.6	42.7	**7.7**	**45.9**
Singapore/Indonesia				1.6	1.6	16.3	11.7	18.8	24.4	111.0	45.2	**8.2**	**26.8**
Republic of Korea/Viet Nam	1.3	2.3	1.5	1.7	1.8	0.8	8.0	23.1	26.9		39.9	**8.3**	**29.8**
Mexico/Nicaragua	1.3	1.8	1.6	1.5	1.1	5.3	2.9	3.9	3.7	1.6		**4.2**	**10.0**
South Africa/Mozambique	1.6	2.4	2.1	2.2	41.0	69.0	5.2	58.9	33.3		47.1	**10.0**	**21.9**
South Africa/Central African Republic	1.5	1.2	1.6	1.7	24.6	69.0		125.4	33.3	0.8		**5.5**	**11.3**
Brazil/Ecuador	1.1	0.8	1.3	1.1	2.0	0.8	1.4	2.6	1.3		4.7	**1.3**	**3.0**
Trinidad and Tobago/Haiti	1.5	2.4	1.5	1.7	63.6	86.0	22.9	40.2	21.0	11.5		**5.4**	**12.6**
Seychelles/Sri Lanka	1.1	1.5	1.5	1.4	2.3	5.8		7.2	14.0	98.0		**3.3**	**6.1**
Seychelles/India	1.0	1.6	1.3	1.6	3.0	2.1		3.0	13.1		10.3	**4.9**	**12.7**
Kuwait/Jordan	1.1	1.2	1.4	1.6		10.1	7.9	14.2	3.9		3.4	**7.3**	**15.6**
Lebanon/Jordan	1.2	1.4	1.2	1.2		1.8	1.1	1.7	2.5	19.0		**1.7**	**4.2**
Egypt/Ethiopia	1.8	2.6	1.5	2.1	31.5		2.2	36.4	16.7	41.9		**6.0**	**10.6**
Mauritius/Madagascar	1.5	2.6	1.7	2.1		15.0		25.3	54.0			**10.0**	**16.7**

30. In conclusion, we believe that the systematic inconsistency in the use of conversion factors — PPP for the *HDR* key indicators and US dollar exchange rate for the main text and headline comparisons of shares of world income — is inappropriate. **In our view, the use of PPP conversions is widely accepted as the best basis for comparisons of standard of living, and so we recommend that these be used throughout the *HDR* as the main form of comparison as they are already in the key indices (see para. 64, recommendation 1). Defining marginalization, and developing appropriate statistical indicators to supplement rather than replace the PPP conversion of per capita GDP, would be advantageous; we recommend this also (see para. 65, recommendation 2).**

IV. Consideration of the Castles criticisms

31. In the following paragraphs we will make our assessment of each of the criticisms made by Mr. Castles. His text is replicated exactly and shown in bold.

32. **1) Share of rich countries in world output**

By the late 1990's the fifth of the world's people living in the highest income countries had...86% of the world GDP...' (page 3, and chart on page 2)

- **The correct figure for the late 1990's is 60-65%. In 1996, the UNCTAD secretariat, using data provided by the HDR Office, itself, estimated that the proportion of the world's GDP of the richest quintile of the global population — ranking countries by their real GDP per capita (PPPS) — was 64.4% in 1960 and 63.7% in 1991 (The Least Developed Countries: 1996 Report, page v).**

- **The early HDRs gave prominence to a claim that the share of the world's GDP produced by the richest fifth of the global population increased from 70% in 1960 to well over 80% by the late 1980's. The claim that the proportion has now reached 86% will not bear scrutiny: its corollary is that the remaining 80% of the world's people produce only 14% of the global output.**

- **In fact, a somewhat smaller group — the 75% of global population in 'low income' and 'lower middle income' countries, as defined by the World Bank — produced 63% of the world's cereals and 81% of the roots and tubers in 1995, and were responsible for 44% of the output (and 38% of the consumption) of commercial energy in 1997 (World Bank, World Development Indicators 1995 and 1997).**

- **Six developing countries (China, Indonesia, Thailand, Brazil and Turkey) alone accounted for more over 25% of the world GDP in 1997, according to Angus Maddison's estimates and the databases for the IMF's *World Economic Outlook* and the World Bank's *World Development Indicators*. Yet none of these countries (not to mention most of the rest of Asia, Africa and Latin America) have a place in the world's 'richest fifth'.**

2) Share of poor countries in world output

'By the late 1990s...he bottom fifth [of the world's people] had just 1% of world output...' (page 3, and chart on page 2)

- **Allowing for difference in price levels between countries, the proportion of output produced by the bottom fifth is now about 4%. It was 3.6% in 1991, according to the UNCTAD estimate cited above.**

- **In HDR 1999 itself, the 'Least developed countries' (LDCs), with about 10% of the world's people (Table 16, page 200) are shown as having as average real GDP per capita (PPP$) equivalent to 15.7% of the world average in 1997 (Table 1, page 137).**

- **This means that the 'poorest 20%' of the world's population must produce more than 3% of the global GDP, even if those in this group who are not in LDCs are just as poor as those who are.**

32.1 Although Mr. Castles does not say so explicitly in the room document, his basic criticism is the choice of US dollar exchange rate rather than PPP as the conversion factor. The supplementary points are intended to reinforce this argument. HDRO (see appendix II) has provided an extensive response to this set of criticisms but recognizes the fundamental point at issue.

32.2 Taken overall and for the reasons given in the previous section, we favour the use of PPP conversion in both the indices (as is the current practice) and the main text and associated figures and tables of each *HDR*. This should be the method used to compare economic output, national income and standards of living, and should be a cornerstone of assessing human development globally. However, supplementary measures to demonstrate marginalization would be beneficial if they can be defined and developed within a development economics framework.

33. **3) Gap between the rich and the poor**

'Today, global inequalities in income and living standards have reached grotesque proportions. The gap in per capita income (GNP) between the countries with the richest fifth of the world's people and those with the poorest fifth widened from 30 to 1 in 1960, to 60 to 1 in 1990, to 74 to 1 in 1995' (pages 104-5).

- **These claims were first made in HDR 1992, and were rebutted in the UNCTAD report already cited.**

- **Estimates of real GDP (PPP basis) in successive HDRs suggest that the ratio of the top fifth to the bottom fifth, ranked by country averages, was about 12:1 in 1960, 18:1 in 1990 and 16:1 in 1997.**

- **All experts agree that estimates which disregard differences in price levels cannot validly be used in comparisons of 'living standards' or of 'human development'.**

- **In any case, the HDR figures are internally inconsistent. The ratio of 74 to 1 is said to relate to 1997 in the 'Overview' to the 1999 *Report* (p. 3), and to 1995 in the main text of the same *Report* (page 105); yet in the 1998 HDR, the 1995 ratio was put at 82 to 1.**

33.1 The basic issue here is still the question of PPP conversion. To claim that the United Nations Conference on Trade and Development (UNCTAD) report amounts to a rebuttal of the *HDR* is not justified, but the former uses PPP conversion, which is consistent with Mr. Castles' main contention. The figures in the second bullet in paragraph 33 above are based on PPP conversion. HDRO accepts that PPP

conversion is better for comparing standards of living (third bullet). The final bullet reflects a typographic error and is not material, although it does represent an example of inadequate quality control in the preparation of the manuscript, an issue that is addressed in recommendation 7 (see para. 70 below).

33.2 Furthermore, it is possible that some readers are confused by the word gap and interpret it as the absolute difference between two values, whereas the *HDR* is correctly referring to the ratio of the two values. Because of different base values, it is possible to have faster relative growth in one country than in another and still have a widening gap in absolute terms. In this sense, the *HDR* may be correct when speaking of a widening gap, even when GDP per capita is estimated using PPP, although in our view it is clear that this was not what was intended. **We recommend that in future issues of the *HDR* the text be chosen so as to avoid any possible confusion on this point (see para. 71, recommendation 8).**

33.3 Although not raised by Mr. Castles, we note that the text and the supporting table (table 6) do not but should cover the same time periods.

34. **4) State of Human Development in the LDC's**

'The marginalization of the least developed countries continues, accelerating as a result of the Asian crisis' (page 105).

- **There have been wide differences between the LDCs in their rate of human development in recent years.**
- **Estimates by the IMF staff published in *World Economic Outlook: September 1999* indicates that real GDP per head in the LDCs as a group (which is very low in absolute terms) has been growing faster than in the 'Group of 7 (G7) major industrial countries. This will be true in the year 2000 for the sixth successive year. Allowing for the increase in the total population of the LDCs, estimated by the UN at 2.5% annually, the IMF estimates imply that the real GDP per head of the LDCs increased in 1995 by 3.7% (G7, 1.6%); in 1996 by 3.1% (G7, 2.3%); in 1997 by 2.5% (G7, 2.3%); in 1998 by 2.0% (G7, 1.7%); in 1999 by 2.7% (G7, 2.0%); and in 2000 by 2.8% (G7, 1.9%).**
- **UNESCO data show that, between 1985 and 1996, gross education enrolments in the LDCs increased by 48% at the first level of education, 55% at the second level and 70% at the third level. (UNESCO *Statistical Yearbook 1998*, p.2-12).**

34.1 There are a number of points at issue here that are related to but go beyond the choice of US dollar and PPP exchange rate conversion.

34.2 First, the reference to the effects of the Asian crisis has a rather different quality, which sets it apart from most of the text of the report. Specifically, the statement is based on forecasts of the impact of the Asian crisis, made too soon after the event for the usual range of economic statistics that would reflect the actual impact to be available. These would become available later. HDRO acknowledges that this reference could have been better placed in chapter 1, where the use of forecasts would have been clearer. Given the nature of the *HDR*, we recognize that HDRO may wish to use forecasts for recent significant world events when firmer statistical estimates are not yet available. **In such cases, we recommend that the text reflect the additional uncertainty and reduction in quality that this**

involves (see para. 66, recommendation 3) (para. 37 above expands on our views on the use of forecasts).

34.3 Second is the issue of whether or not "marginalization" is widening. It is clearly the case that the rate of human development has varied widely among least developed countries in recent years. Nonetheless, the rate of growth in per capita GDP has, on average, been greater among least developed countries than among developed countries, after allowing for the higher rate of population growth in the former. In terms of the per capita GDP element of the HDI, this ought to lead to a narrowing of the relative gap between least developed countries and the developed countries. Of course, this narrowing may be very small compared with the absolute gap between the groups of countries, and it is fair comment to emphasize this. Even 10 or more years of small relative growth may not close the gap by as much as policy makers may want. Nonetheless, in economic terms the picture ought to be of a narrowing rather than a widening of any gap. However, this is confounded by the use of US dollar exchange rates as the conversion factor. When compared with the currencies of least developed countries, if the US dollar increases in value at a faster rate than the least developed countries grow compared with the developed countries, then the narrowing of the gap due to relative growth will be more than offset by the exchange rate deterioration. The overall picture will show a widening of the gap rather than a narrowing (in US dollar exchange rate terms) even if least developed countries have faster real growth. The same phenomenon is possible with the change in PPP conversion factors (or, indeed, any index used for conversion) over time, although these tend to be more stable than exchange rates and intrinsically change at a much slower rate.

34.4 With respect to the first bullet in paragraph 34 above, if it was Mr. Castles' intent to say that data on aggregates of least developed countries can obscure the wide range of those countries' experiences and hence potentially mislead the reader, we are inclined to agree.

34.5 Mr. Castles' point about education enrolment rates (which should properly have been adjusted for population growth in the appropriate age group if available) is presumably intended to show that on the education component of the HDI, the least developed countries are also closing the gap.

34.6 A similar point could have been made about the longevity component of the HDI, given the remarkable improvements in life expectation in many developing countries over the past 20 to 30 years, although the effect of acquired immunodeficiency syndrome (AIDS) is now reversing these gains in the countries most affected by the disease.

34.7 Thus, on all three components of the HDI (GDP per capita, educational enrolment and longevity), the recent past shows, if anything, a relative improvement in human development for the least developed countries.

35. **5) Rate of Growth of Output in LDCs**

Average GDP per capita of the LDCs (1987 US dollar) decreased from $277 in 1990 to $245 in 1997 (Table 6, page 154).

- **These figures cannot be reconciled with the World Bank estimates or IMF World Economic Outlook data, which imply that real GDP per head of the LDCs as a group increased by more than 10% between 1990 and 1997.**

- **The decrease during the 1990s shown in HDR 1999 arises because the HDR Office has not compared like with like. Their calculated average for 1997 excludes one major developed country (Sudan) which was included in 1990. As Sudan's average GDP per capita was over three times the average for the LDCs in 1997 (World Bank, World Development Indicators 1999, Table 4.1), the exclusion of this country in 1997 produces a false comparison.**

- **Using the HDR's own data, the average per capita GDP of the 30 LDCs for which GDP estimates for both 1990 and 1997 are shown in Table 6 of HDR 1999 increased from $US227 in 1997. The average for these countries plus Sudan (using the HDR estimate of this country's GDP per head and the World Bank estimate of its increase) increased from $US270 in 1990 to $US297 in 1997 (which is consistent with the 10% increase implied in the World Economic Outlook estimates).**

35.1 Mr. Castles is referring to the per capita GDP figures given for groups of countries at the foot of table 6. The problem is that in each year these averages are based on a different set of countries. HDRO states that these averages were not used in making inferences for the text. But in our view it is important that the conclusions drawn in the text be firmly based on statistical information where this exists. If alternative statistical sources were available to support the text, then these should have been properly cited. Alternatively, if the best information was contained within the statistical tables, then it is important that the text not conflict with this. Presenting estimates for different time periods based on different sets of countries can be seriously misleading to readers if the time series or rate of growth is likely to be of primary interest. In our view HDRO should present estimates on a consistent basis and these estimates should influence the text of the *HDR*.

35.2 **As a general practice, we recommend that HDRO provide comparable figures in any time series to prevent users from drawing false inferences from inconsistent statistics (see para. 67, recommendation 4). In particular, we note that substantial but artefactual variation in growth rates is likely to occur at some point when a very large country, such as China, moves out of some classification of world or regional low-income countries. Without appropriate statistical procedures, this would result in a severe discontinuity in the time series and potentially serious misunderstanding for users if current presentational practices were to continue.**

35.3 As statisticians, we acknowledge that an objective like this demands not only a consistent publication strategy but also the careful and thorough application of statistical skills to generate and insert adequate estimates of missing data. Since the HDRO database is now available on CD-ROM, a development we warmly welcome, this issue may become even more acute as individual users access and analyse data series.

36. **6) Rate of Growth in Output in 'South Asia'**

Average GDP per capita in 'South Asia' decreased from $US463 in 1990 to $US432 in 1997 (Table 6, page 154).

- **This comparison is obviously wrong, because all countries in 'South Asia' for which comparative figures for 1990 and 1997 are given in Table 6 (i.e., Bangladesh, India, Nepal, Pakistan and Sri Lanka) show increases in GDP**

per capita over this period. The only major country for which figures are not given for 1997 (Iran) also increased its GDP per capita over this period (IMF, World Economic Outlook: May 1999, p. 153). The average of six positive numbers cannot be a negative number.

- **Again the reason for the error in HDR 1999 is a failure to compare like with like: the 1990 average includes Iran, the 1997 average excludes Iran. As this country's average GDP per capita is much higher than in the other countries (especially on the 1987 exchange rate conversion basis used by the HDR Office), its exclusion in 1997 depresses the average for that year and invalidates the comparison.**

7) Rate of Growth in Output in 'South Asia (excluding India)'

Average GDP per capita in 'South Asia (excluding India)' decreased from $US709 to $US327 between 1990 and 1997 (Table 6, page 154)

- **Of more than 130 countries for which comparative figures are shown in Table 6, none suffered a halving of their GDP per capita between 1990 and 1997. It follows that such a massive reduction could not possibly have occurred in a group of countries with a combined population of almost 400 million.**

- **In fact, the changes in average G per capita between 1990 and 1997 in the South Asian countries other than India which are shown in Table 6 are as follows: Bangladesh, +22%; Maldives, 14%; Nepal, 18%; Pakistan, +15%; and Sri Lanka, +26%.**

- **Again, the error arises because of a failure to compare like with like: Iran is included in the 1990 average, and excluded in 1997.**

36.1 The same comments apply as those applied to paragraph 35.

37. **8) Effect of the Asian financial crisis on other countries**

'Angola and Kuwait could...have their GDPs decline by 14-18% [in 1998]...Zambia can expect...a 9% decline in its GDP [in 1998]' (page 40).

- **These estimates, made in a publication released in July 1999, were also shown in Table 1.3 headed 'The Asian crisis hurts distant economies and people' (page 41).**

- **In fact, these declines had not occurred, according to the IMF *World Economic Outlook*: May 1999, released on 20 April 1999.**

- **Angola and Venezuela were estimated in HDR 1999 to have suffered declines in their GDPs in 1998 of 18% and 6% respectively: the IMF estimates published in April 1999 showed no declir : at all. The GDPs of Gabon, Nigeria, Mongolia and Chile were estimated in HDR 1999 to have decreased in 1998 by 13%, 4%, 6%, and 3% respectively: according to the IMF staff there were increases of 2-4% in all of these countries. And the estimated decreases in Kuwait and Zambia shown in HDR 1999, of 14% and 9% respectively, compare with estimated decreases of only 2% on the IMF estimates.**

37.1 The issues here are timing and the use of forecasts. The *HDR* is a large document which must be translated into 11 languages and printed. This means that it

is often not possible to use data that are as current, vis-à-vis the publication date, as HDRO would surely like. Hence, we presume the use of forecasts. In fact, the difference between the date when the document is finalized and when it is published is great enough that more recent and possibly contradictory data will have been disseminated by the time of publication. Criticisms of how recent the data used in the *HDR* are must take these dates into consideration.

37.2 In its response, HDRO claimed that the 1999 *HDR* clearly indicated that these were projections. This is true, but that is all that was said, that is, that the data were projections. Less sophisticated readers of the *HDR* cannot be expected to appreciate the large margin of error associated with projections or forecasts, particularly of macroeconomic measures. **We recommend that in such cases, the *HDR* clearly convey the speculative nature of forecasts to readers, use the "Note on statistics in the *Human Development Report*" to expand on this message and provide references to this material at appropriate points in the text (see para. 66, recommendation 3).**

37.3 In this instance, the degree to which the forecasts proved, in hindsight, to have been seriously in error might give HDRO pause before using similar forecasts in future editions of the *HDR*.

37.4 While on the topic of advising readers of levels of uncertainty, we note in passing that the HDI ranking of developed countries is subject to very large changes due to, among other things, changes in methodology or the adoption of revised data (see, for example, page 166 of the 1999 *HDR*). Readers should be sensitized to this.

38. **9) Growth in GNP per capita in the 1990s**

'During the 1990-1997 real per capita GDP [of the world as a whole] increased at an average annual rate of more than 1% (page 22).

- **This is an extreme understatement. Real GDP per capita of the world as a whole increased at an annual rate of 2.2% between 1990 and 1997 (IMF, *World Economic Outlook: October 1999*, p. 158 and UN Population Division estimates.**

- **The average annual rate of growth in real GDP per capita in 'developing countries' (IMF definition), with 77.5% of the world's population, was 4.3% between 1990 and 1997 (IMF, op. cit, p. 158), compared with a average rate of about 1% per annum for these countries during the previous 170 years (Angus Maddison, 'Economic Progress: the Last half Century in Historical Perspective' in Academy of the Social Sciences in Australia, *Facts and Fancies of Human Development*, Occasional Paper Series 1/2000).**

38.1 The HDRO response documents the conflicting evidence available to it and describes the data underlying the "more than 1 per cent" as "uncertain statistical evidence". What world economic growth was in the 1990-to-1997 period is open to considerable disagreement, so that the statement "an annual average rate of more than 1 per cent" may not be "an extreme understatement" as Mr. Castles has claimed.

38.2 However, under the principle of "fitness for use", it is difficult to justify the use of an estimate of such dubious validity in a summary device, such as "A balance sheet of human development" (*HDR*, p. 22). The data contained in such simplified

summary devices as the balance sheet need to be sufficiently reliable that they can be correctly understood by the reader as they stand. The presence of uncertain statistical evidence could have been indicated by a note along the lines of the following: "From 1990 to 1997, real per capita GDP is variously estimated to have been between x and y per cent".

38.3 The next entry in this passage of the *HDR* reads: "Real per capita consumption increased at an average annual rate of 2.4 per cent during the same period". In a communication subsequent to the room document, Mr. Castles drew attention to the apparent inconsistency of these two statements (that is, real per capita GDP growing at 1 per cent and real per capita consumption growing at 2.4 per cent). According to HDRO, his explanation for the inconsistency was incorrect. A responding communication from HDRO claimed that the data represent private consumption and not private consumption per capita. In other words, based on the HDRO explanation, it would appear to have been a basic error in editing. **This, and similar instances cited elsewhere in the present report prompt us to recommend that the quality assurance procedures in the production of the *HDR* be reviewed (see para. 70, recommendation 7). That having been said, we are not convinced that the data do, in fact, represent "private consumption". Again, it would appear that the required expertise was not applied to the review of the text. We recommend that the necessary expertise, external to HDRO if necessary, be applied to future editions of the *HDR* (see para. 68, recommendation 5).**

39. **10) Growth in Sub-Saharan Africa, Eastern Europe and the CIS**

'Sixty countries have been getting steadily poorer since 1980' (Foreword by Administrator of UNDP, Mark Malloch Brown, p. v).

- **The Administrator appears to have misinterpreted the statement in the body of the Report that 'For 59 countries — mainly in Sub-Saharan Africa and Eastern Europe and the CIS — GNP per capita declined' (p.31).**
- **This statement refers to the net change over the whole period 1980-1996: it cannot be inferred that all of these countries were 'getting steadily poorer' over the period. On the contrary, the GNP per capita of many of these countries increased during 5- or 7-year periods between 1980 and 1997 (Table 6), and the per capita GNPs of most of them increased between 1995 and 1998 (IMF World Economic Outlook: October 1999, pages 169-179).**
- **According to these IMF Staff estimates, the real GDP per capita of 21 of the 27 'countries in transition', and of 35 of the 44 countries in Sub-Saharan Africa, increased in the 1995-98 period (pages 176, 179).**

39.1 **The HDRO response states that the word "steadily" was clearly a mistake. Our recommendation (see para. 70, recommendation 7) is relevant here.**

40. **11) Life expectancy in countries affected by HIV/AIDS**

'A loss of 17 years [in life expectancy] is projected for the nine countries in Africa with an HIV prevalence of 10% or more — Botswana, Kenya, Malawi, Mozambique, Namibia, Rwanda, South Africa, Zambia, Zimbabwe — down to 49 years by 2010...' (page 42).

- **The statement implies that average life expectancy in the countries reached 66 years (49+17 years) before the onset of the epidemic.**

- **According to UN Population Division estimates (World Population Prospects: the 1998 Revision), none of these countries achieved an average life expectancy higher than 61 years, and in most of them the highest average reached was far lower.**

- **This is not to deny the extreme seriousness of the epidemic, and the significance of the losses in life expectancy projected by the UN.**

40.1 The *HDR* passage quoted by Mr. Castles is perhaps not very clearly expressed. But we also note that the inferences drawn by him are inconsistent with the Population Division document he cites. For the purposes of clarification, the relevant passage of the *1998 Revision of the World Population Estimates and Prospects* is quoted in paragraph 40.2 below.

40.2 "The *1998 Revision* shows a devastating toll from AIDS with respect to mortality and population loss. In the 29 African countries in which the impact of AIDS was studied, life expectancy at birth is projected to decrease to 47 years in 1995-2000, whereas it would have been expected to reach 54 years in the absence of the AIDS epidemic. This represents a loss of seven years. The demographic impact of AIDS is even more dramatic when one focuses on the hardest-hit countries, that is, the nine countries with an adult human immunodeficiency virus (HIV) prevalence of 10 per cent or more: Botswana, Kenya, Malawi, Mozambique, Namibia, Rwanda, South Africa, Zambia and Zimbabwe. In these countries, the average life expectancy at birth is estimated to be 10 years less in 1995-2000 than it would have been in the absence of AIDS. By 2010-2015, the average life expectancy at birth in the nine hardest-hit countries is projected to be 17 years less than in the absence of AIDS".

40.3 Perhaps the *HDR* would have been better served had the Population Division report been quoted verbatim.

41. **12) Number of females not expected to survive to age 40**

'Nearly 340 million women are not expected to survive age 40' (page 22).

- **Of the 3020 million females in the world in mid-2000, the UN Population Division estimates that 2280 million are under 40 years of age (UN, *World Population Prospects: the 1998 Revision*, p.11)**

- **Of these 2280 million, more than 2200 million (96.5% of the total) are expected to survive to age 40. (This calculation is made by taking the sum of the projected female population aged 40-44 years in 2040, 35-39 years in 2035, 30-34 years in 2030, and so on.) According to the UN estimates, the number of women not expected to survive to age 40 if therefore less than 80 million, not 340 million.**

- **The error in the text of HDR 1999 is probably attributable to the incorrect column heading in Table 4 ('People not expected to survive to age 40 (as % of total population'). This has led the authors to apply the proportion of non-survivors to age 40 for the 'World' (12.5%) to the entire female population.**

- **In fact, the probability of death before age 5 in the world as a whole, both for females and for males, is 8.3% (WHO, *World Health Report 1999*,**

p.90). The non-survivor proportion of 12.5% from age 0 to 40 shown in the HDR therefore implies a very high probability if survival from age 5 to age 40.

13) Number of people not expected to survive to age 60

'Around 1.5 billion people are not expected to survive to age 60' (page 22)

- **This is another incorrect inference from an incorrect column heading (Table 5, 'People not expected to survive to age 60 (as % of total population').**
- **The UN Population Division estimates imply that the number of people now living who will not survive to age 60 is about 750 million, not 1500 million.**

41.1 HDRO acknowledges that these statements were based on a misinterpretation of the variable and were wrong (we cannot, at the same time, endorse Mr. Castles' "back of the envelope" alternative calculations as sound practice). **As reiterated elsewhere in the present report, we recommend that more attention be given to the technical expertise applied to the review of the *HDR* (see para. 68, recommendation 5).**

42. **14) Youth unemployment in the OECD countries**

'Among the youth [in OECD countries], one in five is unemployed' (page 32)

- **The proportion of youth (persons ages 20-24) in the labour force in industrial countries who are unemployed is 16%, or about 1 in 6 (table 26, page 236).**
- **A footnote to Table 26 correctly notes that the 'total' unemployment rate is related to the labour force, but there is no footnote to indicate that this is also true of the youth unemployment rates cited.**

42.1 The correct interpretation of the statistics is that one in six youths (aged 15 to 24 years) *in the labour force* are unemployed, not one in five of the entire youth population. Since labour force participation rates in this age group are affected by enrolment in education and training and are frequently less than 50 per cent, the difference in interpretation is significant. This is a case in which the error makes a material difference in the reader's perception of the phenomenon being described.

42.2 HDRO also points out that the reference should have been to European Union countries rather than Organisation for Economic Cooperation and Development countries, which also makes a material difference. **In our view, strengthened quality assurance procedures would help to avoid this kind of misinterpretation (see paras. 68 and 70, recommendations 5 and 7).**

43. **15) Agriculture as % of GDP in South Asian countries**

'In many South Asian countries agriculture accounts for more than 33% of GDP...' (p.94)

- **According to the HDR 1999 itself (Table 12) the only South Asian countries in which agriculture accounted for as much as 33% of GDP in**

1997 were Nepal (41%) and Bhutan (38%). The population of these two countries is less than 2% of the population of South Asia.

- **In Bangladesh, India, Pakistan, and Sri Lanka, agriculture accounted for between 20% and 25% of GDP.**

43.1 HDRO acknowledges that the value of 33 per cent quoted is not consistent with table 12 of the *HDR*, where the figure is reported as 25 per cent. The comparison of agriculture's share of GDP to agriculture's contribution to total taxes is a less material error than some of the other errors of this type.

43.2 It is not within our mandate to comment on the HDRO follow-up point about whether or not a contribution to taxes of 6 per cent is desirable.

44. **16) Combined gross enrolment ratios: use of UNESCO data**

'This year's HDI is based on...revised data on...combined gross primary, secondary, and tertiary enrolment rations from UNESCO' (page 128).

- **The resulting significant changes in HDI rankings, which were attributed to revised data on gross enrolments in Table TN1 (pages 164-166), arose because for about 50 countries the data advised by UNESCO had not been used in HDR 1998.**

- **With some exceptions (see below) the HDR Office used the data supplied by UNESCO in HDR 1999. It was this decision by the HDR, and not 'revised data**

44.1 The *HDR* is, of necessity, based on data supplied by many international bodies. These data have inescapable limitations reflecting the challenges of deriving comparable data from a large number of countries, many of which are still striving to develop basic national statistical systems. Added to this is the fact that expertise born of in-depth experience is required to interpret a given body of data and to apply these data appropriately to a given use.

44.2 While HDRO cannot be held accountable for the limitations in the data obtained from international bodies, it should consistently use the most recent data available at the time of finalizing the report unless there are overwhelming reasons not to do so. Additionally, it is accountable for adhering to the advice of these data-supplying agencies when it comes to the use of their data.

44.3 Incorporating that advice extends to the choice of data series for a given application. In the case of enrolment data generated by the United Nations Educational, Scientific and Cultural Organization (UNESCO), we have reason to believe that in the past HDRO has not consistently followed UNESCO's advice.

44.4 However, we understand that HDRO has developed much more effective working relationships with UNESCO when it comes to the choice of data series, the calculations based on those series and the interpretation of those series. To the extent to which this working relationship achieves its goals, it is a model HDRO would be well advised to apply to its relationship with other data providers.

44.5 **In fact, we recommend more generally that HDRO seek to develop closer cooperation with suppliers of key data series since this would be a very effective way of drawing upon additional expertise and knowledge of specific data sets (see para. 69, recommendation 6).**

45. **17) Capping of gross enrolment ratio at 100%**

HDR 1999 did not report the combined gross enrolment ratio (GER) advised by UNESCO for Australia, Belgium, Sweden, and the United Kingdom. For these countries the reported ratio, which the HDR Office used to calculate the human development index (HDI), was 'capped' at 100% (Table 1, page 134).

- **The decision to cap this ratio shows that the Office does not understand the basis of these figures. The 'gross enrolment ratio' is the number of students enrolled in a level of education, regardless of age, as a percentage of the population of official school age...' (page 254, emphasis added).**
- **There are large numbers of enrolments of persons who are above official school age in many 'high human development countries', and it is illogical to adjust some of these ratios downwards. The four countries in respect of which the ratio was capped are those in which the number of 'above official school age' enrolments exceeded the number of the 'official school age' population which is not enrolled.**
- **If the HDR Office had not made this error, the country at the top of the HDI ranks in 1999 would have been Australia, not Canada.**

45.1 As the HDRO response clearly states, the HDI treats 100 per cent enrolment as the goal. Implicit in this is the assumption that enrolment ratios over 100 per cent do not contribute to human development. As the HDRO response indicates, the practice of capping and the assumptions on which it is based are likely to be reviewed in the future as more countries exceed the 100 per cent goal. The meetings, between HDRO and UNESCO for the development of new education indicators, which are referred to in the HDRO response, are welcomed.

45.2 What may be needed is more than just an adjustment of the goalposts, and the meetings with UNESCO may well result in more fundamental changes. The only way that enrolment ratios can exceed 100 per cent, as Mr. Castles points out, is for enrolment to include substantial numbers of students whose age is beyond the upper end of the age range included in the denominator. In fact, the number of these "older students" must exceed the number of non-students in the school-age population for the enrolment ratio to exceed 100 per cent.

45.3 HDRO will have to decide whether, from the perspective of human development, there is a consequential difference between:

(a) Having people attend school at the normal school age;

(b) Having those who leave the educational system before they have completed their studies return as adults to make up for the education they missed as youths.

If there is a difference, then revised measures should reflect it and will, therefore, be something other than gross enrolment ratios. If there is not a difference, then indeed the current capping practice needs to be reconsidered.

45.4 **As noted previously, closer cooperation between HDRO and suppliers of key data series would be a very effective way of drawing upon additional expertise and knowledge of specific data sets, and we recommend that HDRO seek to develop this (see para. 69, recommendation 6).**

46. **18) Combined GERs: Gender-related development index (GDI)**

For purposes of the GDI table, and in calculating the GDI, the combined GERs for females advised by UNESCO were 'capped' for Australia, Belgium, Canada, Finland, Sweden, and the United Kingdom; and those for males were 'capped' for Australia and Belgium.

- **This procedure is illegitimate, for the reason explained in 17) above.**
- **Serious distortions are introduced into the gender-related development index as a result. In the case of the United Kingdom, for example, the combined GERs reported by UNESCO were 109% for females and 99% for males. For purposes of the GDI, HDR 1999 reported that the United Kingdom ratios were 100% for females and 99% for males.**

Although the ratio of females to males in UK enrolments was greater than in any other country, the basis upon which the GDI values were calculated assumes that the ratio of females to males is greater than in the United Kingdom, in 47 countries: Canada, Norway, the United States, Sweden, Iceland, France, Finland, Denmark, New Zealand, Italy, Ireland, Spain, Israel, Brunei Darussalam, Portugal, Bahamas, Slovenia, Kuwait, Bahrain, Argentina, Uruguay, Qatar, Slovakia, United Arab Emirates, Hungary, Venezuela, Panama, Estonia, Malaysia, Cuba, Belarus, Lithuania, Bulgaria, Samoa (Western), Russian Federation, Kazakhstan, Philippines, Ukraine, Kyrgyzstan, Azerbaijan, Moldova, Honduras, Namibia, Mongolia, Nicaragua, Botswana and Lesotho.

46.1 Our comments on Mr. Castles' point 17 (see para. 45 above) apply here as well, and also have consequences for the GDI if data are capped for males but not for females (or vice versa).

47. **19) Meaning of gender-related development index**

'The closer a country's GDI is to its HDI, the less gender disparity there is in the country. But the GDI for every country is lower than its HDI, implying that there is gender inequality in every society. For 43 of the 143 countries, the GDI rank is lower than the HDI rank, revealing the unequal progress in building women's capabilities compared with men's. (p.132)

- **The HDR Office has misinterpreted the GDI results. The GDI is silent about whether the 'unequal progress' has been 'in building women's capabilities compared with men's' or *vice versa*.**
- **Comments in previous *Reports* that 'no society treats its women as well as its men' (HDR 1997, p. 39) and that 'The human development achievements of women fall below those of men in every country' (HDR 1998, p. 31) reveal a similar misconception.**
- **Gender-specific indices can readily be calculated from the data in Table 2. They show that for such countries as the Russian Federation. Belarus, Estonia, Latvia, and Lithuania, the female-specific index is higher than the male-specific index. This is mainly because, in these countries, the average life expectancy at birth of women exceeds that of men by a much larger margin than the difference of five years which the HDR Office**

allows 'to account for the fact that women tend to live longer than men' (p.160).

47.1 As the HDRO response indicates, Mr. Castles is technically correct, but HRDO provides convincing evidence that their *inferred* direction of inequality is well founded.

47.2 In any case, this issue may fall outside our mandate since it is an issue of how to interpret the GDI and does not concern the statistical inputs to the GDI. It nevertheless indicates that the GDI is rather difficult to interpret, and consideration might be given to a simpler measure of gender-specific development, such as the calculation and comparison of separate HDIs for men and women.

48. **20) Relationship between GDP growth and human development**

'Even though there is a strong link between trade and growth, there is no automatic link with human development...Egypt and Pakistan achieved...per capita income growth of more than 3% in 1985-97, yet both still have far to go in human development.'

- **The relevant comparison with growth in income is with the improvement in human development, not with its absolute level.**
- **In fact, Egypt and Pakistan, did not achieve per capita income growth of more than 3% annually in 1985-97: the growth rates implied in the data provided in HDR 1999 itself (Table 6) are 1.7% per annum for Egypt and 2.5% per annum for Pakistan.**
- **Yet there was rapid 'human development' (as measured by the HDI) in both countries in the 1985-97 period. HDR 1999 itself lists Egypt, after Indonesia, as the 'low human development' country which achieved the fastest progress (after Indonesia) in these years (p.130).**
- **The analysis in HDR 1999, and particularly in Table 4.1 on page 85, shows that the HDR Office has been led into error by the index upon which it places such store.**
- **Specifically, the 'stronger links' between economic growth and human development which the Office believes to be established for some countries (Singapore and Hong Kong SAR) merely reflect, for these countries with high HDIs, the dominating influence of rapid per capita income growth in their percentage 'reduction in human development index shortfall'. The argument is circular.**
- **Conversely, there are no grounds for asserting that there are 'weaker links' between economic growth and human development in the case of countries with relatively low HDIs such as Pakistan and Egypt. It was these countries, rather than Singapore and the Hong Kong SAR, which achieved rapid human development in the education and life expectancy components of the HDI in the 1985-97 period. The HDI obscures rather than reveals the relative progress of countries in human development.**

48.1 HDRO admits to errors in terms of inconsistencies between the data shown in the tables and statements made in the text (see second bullet in para. 48 above). **This is another case where our recommendation for greater quality control is applicable (see para. 70, recommendation 7).**

48.2 As for Mr. Castles' other points, they relate to the interpretation of the HDI and its relationship to the component statistics, and may therefore lie outside our mandate.

48.3 Both HDRO and Mr. Castles seem to be putting too much emphasis on individual cases which do not conform to behaviours predicted by a hypothesis. Generally accepted statistical practice dictates that the strength of a relationship cannot be judged by a few examples but by the analysis of a sufficient number of cases to arrive at statistically significant conclusions.

48.4 Good statistical practice also dictates that outliers in an estimated relationship need to be examined in terms of their data quality.

V. Overall conclusions

49. The *HDR* is an influential policy document that may be unrivalled among United Nations publications in terms of the media and popular attention it receives. Its messages appear to influence national and international policy activities. Its techniques and statistics are replicated widely and inspire national development reports.

50. It is also a statistical document. Although HDRO argues that its intent is not to create a statistical document, the *HDR* is probably perceived as such by its readership. Almost half of the pages in the 1999 *HDR* (English version) consist entirely of statistical tables. Additional smaller tables and many charts and graphs are sprinkled throughout the text. In many instances, policy advice and conclusions are based or presented as being based on the statistical evidence.

51. The *HDR* readership is large, diverse and in many instances lacking in either the experience or the technical knowledge to critically assess the statistical evidence contained in the document. This creates, however unintentionally, a situation of dependence and consequently also of trust. Many users of the *HDR* who have a need for the data or the data-based information that it contains must take it on faith that the information and the data are precisely what they purport to be.

52. In summary, considerations of popularity, effect and trust impose a special burden on HDRO to adhere to the highest standards of good statistical practice.

53. HDRO recognizes this responsibility and is taking actions that offer the possibility of enhanced statistical quality in future editions of the *HDR*. Specifically, according to a communication from Sakiko Fukuda-Parr, HDRO Director, to Ian Macredie, dated 16 June 2000,

- HDRO is reviewing the general principles in the use of statistics in the *HDR*;
- HDRO intends to take a much more active part in the debates among statisticians on issues of measuring human development. This will include participation in Statistical Commission and ACC subcommittee meetings;
- HDRO is undertaking a thorough review of the design and finalization of indicator tables, the use of statistics in analysis and the use of statistics in the presentation of the *HDR*;
- HDRO is setting up a statistical advisory panel that will meet twice a year at crucial stages in the HDRO work cycle;

- HDRO has appointed Tom Griffin, former Director of Statistics of the Economic Commission for Europe, as Senior Statistical Consultant to advise on all aspects of statistics in the *HDR*, including the initiatives listed above.

In addition, as noted in paragraph 44 above, HDRO is already in discussion with UNESCO on issues of capping education measures. This sort of working contact between HDRO and key suppliers of data series can only be beneficial and is to be encouraged.

54. Our group was asked to prepare a report on the accuracy of the statistical information in the *HDR*, focusing on the points raised by the room document authored by Castles. Given that the mandate of the group called only for an assessment of the accuracy of the statistical information in the *HDR*, those criticisms of Mr. Castles that were judged by the group to be issues of data interpretation were deemed to be beyond our mandate.

55. Among those issues deemed to be within our mandate, in several instances we found that the criticisms of Mr. Castles were justified and reflected material errors (see para. 59 below concerning material errors). In some cases, the choice of data failed to meet the "fitness for purpose" criterion. The most significant was the choice of the US dollar as opposed to PPP dollars to convert national statistics to internationally comparable ones. This basic issue has implications throughout the *HDR* and was at the root of a number of his criticisms.

56. In other instances, the group concluded that there were errors in the calculations underlying the data used in the *HDR*; for example, the estimates of the number of females not expected to survive to age 40 (see para. 41 above) and the number of people not expected to survive to age 60 (see para. 41 above).

57. The preparation of the *HDR* calls upon the application of many professional disciplines: economics, demography and statistics to name a few. The practice of adopting distinct and specific themes for each year's *HDR* only serves to increase the breadth of expertise required producing the *ensemble* of *HDR*s. In several instances, we found that calculations had been performed or interpretations applied to the data which were wrong, apparently because the appropriate expertise had not been applied. The steps that HDRO is currently taking, through several advisory mechanisms, to extend the breadth of disciplines applied to the review of the draft *HDR* can only help to reduce the incidence of this type of error.

58. Finally, there were instances of simple errors, such as numbers in the text being inconsistent with the data in the tables, erroneous labels (for example, population when labour force was intended), typographical errors etc.

59. Errors of all types can be divided into material and non-material errors. Material errors are those which leave the reader with a fundamentally distorted picture of the phenomenon being described, whereas non-material errors result in the reader having a slightly erroneous but essentially valid picture. Several of the errors identified by Mr. Castles and confirmed by us were material errors. For example, the use of PPPs rather than US dollar conversions would show that the fifth of the world's people living in the highest income countries have 60 per cent to 65 per cent, not 86 per cent, of the world's income, and that the gap in per capita income between the countries with the richest fifth of the world's population and those with the poorest fifth is not 74 to 1 but 16 to 1, and that the gap is not unequivocally widening but moderately fluctuating.

60. We see the steps that HDRO is undertaking (see para. 53 above), together with our specific recommendations, as providing a reasonable route to avoiding both errors of choice and errors in calculations. Simple errors of inconsistency and the like can best be avoided using standard manuscript management and quality control procedures.

61. Advisory bodies with the appropriate expertise can play a role in avoiding most of the material errors of the type we detected. However, the effectiveness of advisory bodies depends on how they are used. While they will be of some use while the planning of a given *HDR* is still at the conceptual stage, their real strength in the area of reducing errors lies in their reviewing drafts of the actual manuscript. Without question, this encumbers the manuscript production process, so allowances will need to be built into the manuscript development schedule to accommodate these reviews.

62. Taking an overview of the entire *HDR* and assessing the deficiencies that we were able to confirm, we concluded that the credibility of the main statistical tables in the *HDR* was not substantially affected by these errors. However, we would like to see a much stronger and transparent connection between the main statistical tables and the passages in the main text that are based on them. Furthermore, when statements are made in the main text that are based on data not found in the main statistical tables, good statistical and social science practice dictates that source statements be provided. **Credibility depends on ensuring that empirically based statements can be verified. (See para. 72, recommendation 9.)**

63. Finally, it is essential to recognize the very substantial challenges faced by HDRO in putting together the *HDR* each year. This is a large, complex document. Given that a different theme is chosen each year, the text, text tables and charts are all unique to each issue. Even the standard tables need to be verified whenever there are revisions to the source data. The document is translated into 11 languages, and anyone who has worked with statistical documents in several languages can appreciate the additional quality control challenges posed by such extensive translation. All of the quality control has to be applied in a brief period of time, by an office that is not large and whose statistical staff is very small. In order to maximize the impact of the conclusions and the policy advice in the *HDR*, we recognize that HDRO needs to ensure that the data contained in the *HDR* are as timely as possible. This is in order to limit the extent to which they are superseded by newer or revised estimates, released between the time the manuscript is finalized and when it is published. This severely limits the time available to verify and refine the manuscript. Under these circumstances, errors are inevitable. It is up to HDRO to make the optimal trade-off between accuracy and timeliness. To achieve a satisfactory trade-off, HDRO may need to limit the range of topics covered or the degree of detail with which a topic is addressed.

VI. Recommendations

Recommendation 1

64. We recommend that PPP dollars be used throughout the *HDR* as the main form of comparison of living standards as they are already in the key indices (paras. 16 to 30 and 34.3).

Recommendation 2

65. We recommend that marginalization of countries be defined and that appropriate statistical indicators of marginalization be developed and published to supplement rather than replace PPP conversions (paras. 28 and 30).

Recommendation 3

66. We recommend that where forecasts or projections are used, the text should clearly reflect the additional uncertainty and reduction in quality characteristic of data of this type. We further recommend that the material conveying the speculative nature of forecasts be conveyed to readers in the "Notes on statistics in the *Human Development Report*", and that at appropriate points in the text references to this material be included (paras. 34.2 and 37).

Recommendation 4

67. HDRO should provide comparable time series (in particular those based on a constant set of countries) to avoid having users draw false inferences from inconsistent statistics. Since the HDRO database is now available on a CD-ROM, a development we warmly welcome, this issue may become even more acute as individual users access and analyse data series independently (para. 35).

Recommendation 5

68. We recommend that HDRO ensure, through a combination of in-house expertise and advisory/review bodies, that the expertise required to validate all of the material in the *HDR* be applied to the review of the draft report. We recognize that to be fully effective, some of the reviews by experts need to be applied to close-to-final versions of the manuscript. This may necessitate revising the manuscript preparation schedule to accommodate these reviews (paras. 38.3, 41, 42.2 and 43).

Recommendation 6

69. Closer cooperation between HDRO and suppliers of key data series would be a very effective way of drawing upon additional expertise and knowledge of specific data sets, and we recommend that it seek to develop this (paras. 6, 11, 41, 44.5 and 45.4).

Recommendation 7

70. We recommend that HDRO manuscript management and quality control procedures be reviewed and strengthened. The experience of statistical agencies producing documents of the *HDR* genre may be beneficial (paras. 33.1, 38.3, 39, 42.2, 48.1 and elsewhere).

Recommendation 8

71. We recommend that in future issues of the *HDR*, the text be chosen to avoid any possible confusion between absolute and relative growth. This is particularly relevant when there is a wide range in denominators (para. 33.2).

Recommendation 9

72. We recommend that data source information be provided for *all* statements based on statistical evidence. In several instances, statements appeared in the *HDR* that were based on data not shown in either the main tables or the text tables and for which no data source information was provided. This is contrary to good statistical and social science practice and leaves the reader unable to verify the statistical validity of these statements. The result is a loss of credibility (paras. 35.1 and 62).

Appendix I

Mr. Castles' room document

Opinions differ about the merits of the Human Development Report (HDR), issued annually by the United Nations Development Programme (UNDP).

According to Amartya Sen, 1998 Nobel Laureate in economics, it is 'one of the major sources of information and understanding of the social and economic world'; and the UNDP's new Administrator, Mark Malloch Brown, sees the Report as the organisation's 'crown jewel' (1999 Report, page v).

But David Henderson, former head of the Economics and Statistics Department of the OECD, has recently described the HDR 1997 as a 'badly flawed document' which offers a false perspective on world affairs ('False Perspective: the UNDP View of the World' in Facts and Fancies of Human Development, Academy of the Social Sciences in Australia Occasional Paper Series 1/2000, forthcoming). Among many 'excesses, deficiencies and misrepresentations' of the HDR, Henderson referred to its 'irresponsible and unprofessional treatment of statistical evidence' and drew attention to my review on HDR 1998 (Ian Castles, 'The Mismeasurement of Nations: A review essay on the Human Development Report 1998' in Population and Development Review 24 (4), December 1998).

This paper follows up my review article. It points to a number of examples of 'unprofessional treatment of statistical evidence' in HDR 1999. These examples show that the statistics of the Report cannot be relied upon. I believe that professional statisticians have an obligation to make this known to the world's governments, international organisations, non-governmental organisations (NGOs), the media and the research community.

1) Share of rich countries in world output

'By the late 1990's the fifth of the world's people living in the highest income countries had...86% of the world GDP...' (page 3, and chart on page 2)

- The correct figure for the late 1990's is 60-65%. In 1996, the UNCTAD secretariat, using data provided by the HDR Office, itself, estimated that the proportion of the world's GDP of the richest quintile of the global population - ranking countries by their real GDP per capita (PPP$) – was 64.4% in 1960 and 63.7% in 1991 (The Least Developed Countries: 1996 Report, page v).

- The early HDRs gave prominence to a claim that the share of the world's GDP produced by the richest fifth of the global population increased from 70% in 1960 to well over 80% by the late 1980's. The claim that the proportion has now reached 86% will not bear scrutiny: its corollary is that the remaining 80% of the world's people produce only 14% of the global output.

- In fact, a somewhat smaller group – the 75% of global population in 'low income' and 'lower middle income' countries, as defined by the World Bank – produced 63% of the world's cereals and 81% of the roots and tubers in 1995, and were responsible for 44% of the output (and 38% of the consumption) of commercial energy in 1997 (World Bank, World Development Indicators 1995 and 1997).
- Six developing countries (China, Indonesia, Thailand, Brazil and Turkey) alone accounted for more over 25% of the world GDP in 1997, according to Angus Maddison's estimates and the databases for the IMF's World Economic Outlook and the World Bank's World Development Indicators. Yet none of these countries (not to mention most of the rest of Asia, Africa and Latin America) have a place in the world's 'richest fifth'.

2) Share of poor countries in world output

'By the late 1990s...he bottom fifth [of the world's people] had just 1% of world output...' (page 3, and chart on page 2)

- Allowing for difference in price levels between countries, the proportion of output produced by the bottom fifth is now about 4%. It was 3.6% in 1991, according to the UNCTAD estimate cited above.
- In HDR 1999 itself, the 'Least developed countries' (LDCs), with about 10% of the world's people (Table 16, page 200) are shown as having as average real GDP per capita (PPP$) equivalent to 15.7% of the world average in 1997 (Table 1, page 137).

- This means that the 'poorest 20%' of the world's population must produce more than 3% of the global GDP, even if those in this group who are not in LDCs are just as poor as those who are.

3) Gap between the rich and the poor

'Today, global inequalities in income and living standards have reached grotesque proportions. The gap in per capita income (GNP) between the countries with the richest fifth of the world's people and those with the poorest fifth widened from 30 to 1 in 1960, to 60 to 1 in 1990, to 74 to 1 in 1995' (pages 104-5).

- These claims were first made in HDR 1992, and were rebutted in the UNCTAD report already cited.
- Estimates of real GDP (PPP basis) in successive HDRs suggest that the ratio of the top fifth to the bottom fifth, ranked by country averages, was about 12:1 in 1960, 18:1 in 1990 and 16:1 in 1997.
- All experts agree that estimates which disregard differences in price levels cannot validly be used in comparisons of 'living standards' or of 'human development'.

- In any case, the HDR figures are internally inconsistent. The ratio of 74 to 1 is said to relate to 1997 in the 'Overview' to the 1999 Report (p. 3), and to 1995 in the main text of the same Report (page 105); yet in the 1998 HDR, the 1995 ratio was put at 82 to 1.

4) State of Human Development in the LDCs

'The marginalization of the least developed countries continues, accelerating as a result of the Asian crisis' (page 105).

- There have been wide differences between the LDCs in their rate of human development in recent years.
- Estimates by the IMF staff published in World economic Outlook: September 1999 indicates that real GDP per head in the LDCs as a group (which is very low in absolute terms) has been growing faster than in the 'Group of 7 (G7) major industrial countries. This will be true in the year 2000 for the sixth successive year. Allowing for the increase in the total population of the LDCs, estimated by the UN at 2.5% annually, the IMF estimates imply that the real GDP per head of the LDCs increased in 1995 by 3.7% (G7, 1.6%); in 1996 by 3.1% (G7, 2.3%); in 1997 by 2.5% (G7, 2.3%); in 1998 by 2.0% (G7, 1.7%); in 1999 by 2.7% (G7, 2.0%); and in 2000 by 2.8% (G7, 1.9%).
- UNESCO data show that, between 1985 and 1996, gross education enrolments in the LDCs increased by 48% at the first level of education, 55% at the second level and 70% at the third level. (UNESCO Statistical Yearbook 1998, p.2-12).

5) Rate of Growth of Output in LDCs

Average GDP per capita of the LDCs (1987 US$) decreased from $277 in 1990 to $245 in 1997 (Table 6, page 154).

- These figures cannot be reconciled with the World Bank estimates or IMF World Economic Outlook data, which imply that real GDP per head of the LDCs as a group increased by more than 10% between 1990 and 1997.
- The decrease during the 1990s shown in HDR 1999 arises because the HDR Office has not compared like with like. Their calculated average for 1997 excludes one major developed country (Sudan) which was included in 1990. As Sudan's average GDP per capita was over three times the average for the LDCs in 1997 (World Bank, World Development Indicators 1999, Table 4.1), the exclusion of this country in 1997 produces a false comparison.
- Using the HDR's own data, the average per capita GDP of the 30 LDCs for which GDP estimates for both 1990 and 1997 are shown in Table 6 of HDR 1999 increased from $US227 in 1997. The average for these countries plus Sudan (using the HDR estimate of this country's GDP per head and the World Bank estimate of its increase) increased from $US270 in 1990 to $US297 in 1997 (which is consistent with the 10% increase implied in the World Economic Outlook estimates).

6) Rate of Growth in Output in 'South Asia'

Average GDP per capita in 'South Asia' decreased from $US463 in 1990 to $US432 in 1997 (Table 6, page 154).

- This comparison is obviously wrong, because all countries in 'South Asia' for which comparative figures for 1990 and 1997 are given in Table 6 (i.e.,

Bangladesh, India, Nepal, Pakistan and Sri Lanka) show increases in GDP per capita over this period. The only major country for which figures are not given for 1997 (Iran) also increased its GDP per capita over this period (IMF, World Economic Outlook: May 1999, p. 153). The average of six positive numbers cannot be a negative number.

- Again the reason for the error in HDR 1999 is a failure to compare like with like: the 1990 average includes Iran, the 1997 average excludes Iran. As this country's average GDP per capita is much higher than in the other countries (especially on the 1987 exchange rate conversion basis used by the HDR Office), its exclusion in 1997 depresses the average for that year and invalidates the comparison.

7) Rate of Growth in Output in 'South Asia (excluding India)'

Average GDP per capita in 'South Asia (excluding India)' decreased from $US709 to $US327 between 1990 and 1997 (Table 6, page 154)

- Of more than 130 countries for which comparative figures are shown in Table 6, none suffered a halving of their GDP per capita between 1990 and 1997. It follows that such a massive reduction could not possibly have occurred in a group of countries with a combined population of almost 400 million.

- In fact, the changes in average GDP per capita between 1990 and 1997 in the South Asian countries other than India which are shown in Table 6 are as follows: Bangladesh, +22%; Maldives, 14%; Nepal, 18%; Pakistan, +15%; and Sri Lanka, +26%.
- Again, the error arises because of a failure to compare like with like: Iran is included in the 1990 average, and excluded in 1997.

8) Effect of the Asian financial crisis on other countries

'Angola and Kuwait could...have their GDPs decline by 14-18% [in 1998]...Zambia can expect...a 9% decline in its GDP [in 1998]' (page 40).

- These estimates, made in a publication released in July 1999, were also shown in Table 1.3 headed 'The Asian crisis hurts distant economies and people' (page 41).
- In fact, these declines had not occurred, according to the IMF World Economic Outlook: May 1999, released on 20 April 1999.
- Angola and Venezuela were estimated in HDR 1999 to have suffered declines in their GDPs in 1998 of 18% and 6% respectively: the IMF estimates published in April 1999 showed no decline at all. The GDPs of Gabon, Nigeria, Mongolia and Chile were estimated in HDR 1999 to have decreased in 1998 by 13%, 4%, 6%, and 3% respectively: according to the IMF staff there were increases of 2-4% in all of these countries. And the estimated

decreases in Kuwait and Zambia shown in HDR 1999, of 14% and 9% respectively, compare with estimated decreases of only 2% on the IMF estimates.

9) Growth in GNP per capita in the 1990s

'During the 1990-1997 real per capita GDP [of the world as a whole] increased at an average annual rate of more than 1% (page 22).

- This is an extreme understatement. Real GDP per capita of the world as a whole increased at an annual rate of 2.2% between 1990 and 1997 (IMF, World Economic Outlook: October 1999, p. 158 and UN Population Division estimates.

- The average annual rate of growth in real GDP per capita in 'developing countries' (IMF definition), with 77.5% of the world's population, was 4.3% between 1990 and 1997 (IMF, op. cit, p. 158), compared with a average rate of about 1% per annum for these countries during the previous 170 years (Angus Maddison, 'Economic Progress: the Last half Century in Historical Perspective' in Academy of the Social Sciences in Australia, Facts and Fancies of Human Development, Occasional Paper Series 1/2000).

10) Growth in Sub-Saharan Africa, Eastern Europe and the CIS

'Sixty countries have been getting steadily poorer since 1980' (Foreword by Administrator of UNDP, Mark Malloch Brown, p. v)

- The Administrator appears to have misinterpreted the statement in the body of the Report that 'For 59 countries-mainly in Sub-Saharan Africa and Eastern Europe and the CIS-GNP per capita declined' (p.31).
- This statement refers to the net change over the whole period 1980-1996: it cannot be inferred that all of these countries were 'getting steadily poorer' over the period. On the contrary, the GNP per capita of many of these countries increased during 5- or 7-year periods between 1980 and 1997 (Table 6), and the per capita GNPs of most of them increased between 1995 and 1998 (IMF World Economic Outlook: October 1999, pages 169-179).
- According to these IMF Staff estimates, the real GDP per capita of 21 of the 27 'countries in transition', and of 35 of the 44 countries in Sub-Saharan Africa, increased in the 1995-98 period (pages 176, 179).

11) Life expectancy in countries affected by HIV/AIDS

'A loss of 17 years [in life expectancy] is projected for the nine countries in Africa with an HIV prevalence of 10% or more-Botswana,, Kenya, Malawi, Mozambique,

Namibia, Rwanda, South Africa, Zambia, Zimbabwe-down to 49 years by 2010...' (page 42).

- The statement implies that average life expectancy in the countries reached 66 years (49+17 years) before the onset of the epidemic.
- According to UN Population Division estimates (World Population Prospects: the 1998 Revision), none of these countries achieved an average life expectancy higher than 61 years, and in most of them the highest average reached was far lower.
- This is not to deny the extreme seriousness of the epidemic, and the significance of the losses in life expectancy projected by the UN.

12) Number of females not expected to survive to age 40

'Nearly 340 million women are not expected to survive age 40' (page 22).

- Of the 3020 million females in the world in mid-2000, the UN Population Division estimates that 2280 million are under 40 years of age (UN, World Population Prospects: the 1998 Revision, p.11)
- Of these 2280 million, more than 2200 million (96.5% of the total) are expected to survive to age 40. (This calculation is made by taking the sum of the projected female population aged 40-44 years in 2040, 35-39 years in 2035, 30-34 years in 2030, and so on.) According to the UN estimates, the number of women not expected to survive to age 40 if therefore less than 80 million, not 340 million.

- The error in the text of HDR 1999 is probably attributable to the incorrect column heading in Table 4 ('People not expected to survive to age 40 (as % of total population'). This has led the authors to apply the proportion of non-survivors to age 40 for the 'World' (12.5%) to the entire female population.
- In fact, the probability of death before age 5 in the world as a whole, both for females and for males, is 8.3% (WHO, World Health Report 1999, p.90). The non-survivor proportion of 12.5% from age 0 to 40 shown in the HDR therefore implies a very high probability if survival from age 5 to age 40.

13) Number of people not expected to survive to age 60

'Around 1.5 billion people are not expected to survive to age 60' (page 22)

- This is another incorrect inference from an incorrect column heading (Table 5, 'People not expected to survive to age 60 (as % of total population').
- The UN Population Division estimates imply that the number of people now living who will not survive to age 60 is about 750 million, not 1500 million.

14) Youth unemployment in the OECD countries

'Among the youth [in OECD countries], one in five is unemployed' (page 32)

- The proportion of youth (persons ages 20-24) in the labour force in industrial countries who are unemployed is 16%, or about 1 in 6 (table 26, page 236).

- A footnote to Table 26 correctly notes that the 'total' unemployment rate is related to the labour force, but there is no footnote to indicate that this is also true of the youth unemployment rates cited.
- The proportion of unemployed 15-24 year-olds in industrial countries is less than one in ten.

15) Agriculture as % of GDP in South Asian countries

'In many South Asian countries agriculture accounts for more than 33% of GDP...' (p.94)

- According to the HDR 1999 itself (Table 12) the only South Asian countries in which agriculture accounted for as much as 33% of GDP in 1997 were Nepal (41%) and Bhutan (38%). The population of these two countries is less than 2% of the population of South Asia.
- In Bangladesh, India, Pakistan, and Sri Lanka, agriculture accounted for between 20% and 25% of GDP.

16) Combined gross enrolment ratios: use of UNESCO data

'This year's HDI is based on...revised data on...combined gross primary, secondary, and tertiary enrolment rations from UNESCO' (page 128).

- The resulting significant changes in HDI rankings, which were attributed to revised data on gross enrolments in Table TN1 (pages 164-166), arose

because for about 50 countries the data advised by UNESCO had not been used in HDR 1998.

- With some exceptions (see below) the HDR Office used the data supplied by UNESCO in HDR 1999. It was this decision by the HDR, and not 'revised data

17) Capping of gross enrolment ratio at 100%

HDR 1999 did not report the combined gross enrolment ratio (GER) advised by UNESCO for Australia, Belgium, Sweden, and the United Kingdom. For these countries the reported ratio, which the HDR Office used to calculate the human development index (HDI), was 'capped' at 100% (Table 1, page 134).

- The decision to cap this ratio shows that the Office does not understand the basis of these figures. The 'gross enrolment ratio' is the number of students enrolled in a level of education, regardless of age, as a percentage of the population of official school age...' (page 254, emphasis added).
- There are large numbers of enrolments of persons who are above official school age in many 'high human development countries', and it is illogical to adjust some of these ratios downwards. The four countries in respect of which the ratio was capped are those in which the number of 'above official school age' enrolments exceeded the number of the 'official school age' population which is not enrolled.

- If the HDR Office had not made this error, the country at the top of the HDI ranks in 1999 would have been Australia, not Canada.

18) Combined GERs: Gender-related development index (GDI)

For purposes of the GDI table, and in calculating the GDI, the combined GERs for females advised by UNESCO were 'capped' for Australia, Belgium, Canada, Finland, Sweden, and the United Kingdom; and those for males were 'capped' for Australia and Belgium.

- This procedure is illegitimate, for the reason explained in 17) above.
- Serious distortions are introduced into the gender-related development index as a result. In the case of the United Kingdom, for example, the combined GERs reported by UNESCO were 109% for females and 99% for males. For purposes of the GDI, HDR 1999 reported that the United Kingdom ratios were 100% for females and 99% for males.
- Although the ratio of females to males in UK enrolments was greater than in any other country, the basis upon which the GDI values were calculated assumes that the ratio of females to males is greater than in the United Kingdom, in 47 countries: Canada, Norway, the United States, Sweden, Iceland, France, Finland, Denmark, New Zealand, Italy, Ireland, Spain, Israel, Brunei Darussalam, Portugal, Bahamas, Slovenia, Kuwait, Bahrain, Argentina, Uruguay, Qatar, Slovakia, United Arab Emirates, Hungary,

Venezuela, Panama, Estonia, Malaysia, Cuba, Belarus, Lithuania, Bulgaria, Samoa (Western), Russian Federation, Kazakhstan, Philippines, Ukraine, Kyrgyzstan, Azerbaijan, Moldova, Honduras, Namibia, Mongolia, Nicaragua, Botswana and Lesotho.

19) Meaning of gender-related development index

'The closer a country's GDI is to its HDI, the less gender disparity there is in the country. But the GDI for every country is lower than its HDI, implying that there is gender inequality in every society. For 43 of the 143 countries, the GDI rank is lower than the HDI rank, revealing the unequal progress in building women's capabilities compared with men's. (p.132)

- The HDR Office has misinterpreted the GDI results. The GDI is silent about whether the 'unequal progress' has been 'in building women's capabilities compared with men's' or vice versa.
- Comments in previous Reports that 'no society treats its women as well as its men' (HDR 1997, p. 39) and that 'The human development achievements of women fall below those of men in every country' (HDR 1998, p. 31) reveal a similar misconception.

- Gender-specific indices can readily be calculated from the data in Table 2. They show that for such countries as the Russian Federation. Belarus, Estonia, Latvia, and Lithuania, the female-specific index is higher than the male-

specific index. This is mainly because, in these countries, the average life expectancy at birth of women exceeds that of men by a much larger margin than the difference of five years which the HDR Office allows 'to account for the fact that women tend to live longer than men' (p.160).

20) Relationship between GDP growth and human development

'Even though there is a strong link between trade and growth, there is no automatic link with human development...Egypt and Pakistan achieved...per capita income growth of more than 3% in 1985-97, yet both still have far to go in human development.'

- The relevant comparison with growth in income is with the improvement in human development, not with its absolute level.
- In fact, Egypt and Pakistan, did not achieve per capita income growth of more than 3% annually in 1985-97: the growth rates implied in the data provided in HDR 1999 itself (Table 6) are 1.7% per annum for Egypt and 2.5% per annum for Pakistan.
- Yet there was rapid 'human development' (as measured by the HDI) in both countries in the 1985-97 period. HDR 1999 itself lists Egypt, after Indonesia, as the 'low human development' country which achieved the fastest progress (after Indonesia) in these years (p.130).

- The analysis in HDR 1999, and particularly in Table 4.1 on page 85, shows that the HDR Office has been led into error by the index upon which it places such store.

- Specifically, the 'stronger links' between economic growth and human development which the Office believes to be established for some countries (Singapore and Hong Kong SAR) merely reflect, for these countries with high HDIs, the dominating influence of rapid per capita income growth in their percentage 'reduction in human development index shortfall'. The argument is circular.

- Conversely, there are no grounds for asserting that there are 'weaker links' between economic growth and human development in the case of countries with relatively low HDIs such as Pakistan and Egypt. It was these countries, rather than Singapore and the Hong Kong SAR, which achieved rapid human development in the education and life expectancy components of the HDI in the 1985-97 period. The HDI obscures rather than reveals the relative progress of countries in human development.

Appendix II

Response of the Human Development Report Office to Mr. Castles' room document

An unsigned paper by Mr. Castles circulated at the 31st Statistical Commission session in New York earlier this month made a number of serious criticisms relating to the use of statistics and statistical data in the *Human Development Report 1999*. (Although Mr. Castles' paper is titled 'The Human Development Report 1997', its contents refer to the HDR1999 not 1997). This widely read report is prepared annually by the Human Development Report Office, an editorially independent unit of the United Nations Development Programme. During its ten years of existence, the Report has won a global reputation for its innovative analysis and statistical measures of human development and human poverty. Mr. Castles argues against this rather widely shared view, and in addition to giving his own judgements, he quotes in his support Mr. David Henderson's belief that there are "excesses, deficiencies and misrepresentations" in the *Human Development Reports*. These opinions deserve careful scrutiny.

A general point should be stated at the very beginning of this exercise. Any organisation that tries to present international data is inescapably faced with gaps in information and sometimes with contradictory data. This applies as much to the UNDP as it does to other organisations that try to deal with the imperfect data situation in the contemporary world. The UNDP is very aware of the fine work that is done by the sister publications of the HDR, such as the *World Development Report* of the World Bank and various publications of the United Nations family. It takes note of how others interpret the

"balance" of evidence that can be obtained at this time. The empirical conclusions reached by HDR can be criticised in the same way that empirical judgements of other organisations can also be questioned; the data situation makes this impossible to avoid. But the point of the exercise is not, as Mr. Castles seems to suppose, to seek some unquestionable empirical conclusions, against which no data whatsoever can be presented, but to provide the conclusions that strongly emerge in making sense of the totality of available information that currently exists.

This general point is important to seize in assessing the specific criticisms of Mr. Castles (to be scrutinised presently), since throughout his paper there is an implicit presumption that the existence of a different estimate fatally undermines HDR's own estimate of any variable. The motivation that guides the HDR is that responsible public discussion is better served by trying to make sense of the available empirical evidence (incomplete and sometimes somewhat contrary, as they are) than by having no empirical information at all. This basic strategy relates to the need to avoid policy discussions that are entirely abstracted from empirical understanding.

The UNDP remains fully committed to doing the best it can to illuminate public discussion through the most cogent picture it can provide of the situation, trends, and priorities for action on human development throughout the world. This is not to deny that sometimes our judgements might well be faulty (in fact, HDR has revised its past conclusion on a number of occasions), and for this reason we welcome all critical scrutinies of the HDR.

There is also a need for more action to strengthen the collection and analysis of data on human development especially in developing countries. Social indicators are in many countries less available, less reliable, less up to date and less rapidly processed than mainstream economic indicators. This is a deficiency which we hope the statistical commission and its national and international partners will give priority attention to.

This response clearly outlines that none of the points raised by Mr. Castles alters the message conveyed in the report. In particular, they in no way challenge the contention that issues of poverty of people and nations, of inequality, and of the need to accelerate human development remain major issues of policy concern for the international community. On the matters of economic and statistical judgment (a) we refute that we were in the wrong, and stand by the analysis in HDR1999. We take note of the presentational points (b) raised by Mr. Castles, and regret any errors or misprints (c+d) that occurred, and are committed to taking corrective action. In the points relating to the HDI and other indices(e), Mr. Castles presents issues well known to the HDRO, that are already under constant review.

Mr. Castles raises twenty points in his room document. These points can be roughly classified into the following categories:

a. Matters of economic or statistical judgement, not statistical objectivity: 1, 2, 3, 4, 8, 9, 20.

b. Presentational points: 5, 6, 7, 14, 15.

c. Typographical mistakes by the HDRO: 11.

d. Mistakes in statistical interpretation by the HDRO: 10, 12, 13, 19.

e. Issues relating to the methodology of HDI or other Indices: 16, 17, 18.

Several of these points focus on similar issues. Points 1, 2, and 3 refer to the appropriate way of calculating income shares; points 5, 6, and 7 all refer to how to more clearly present statistical aggregates for time series of regional income; points 12 and 13 both address the technical error in estimating people not expected to survive to age 40/60; and points 17 and 18 both refer to the issue of how the Human Development Indices deal with the gross enrolment ratio. To avoid repetition we have answered the first of each of these collected points in full, addressing only the new issues raised by subsequent points.

Our response to each of the 20 points is organized in the following way: First, the original text of Mr. Castles' is cited in **bold letters**, followed immediately by an HDRO response.

Mr. Castles:

The Human Development Report 1997

Opinions differ about the merits of the *Human Development Report* (HDR), issued annually by the United Nations Development Programme (UNDP).

According to Amartya Sen, 1998 Nobel Laureate in economics, it is 'one of the major sources of information and understanding of the social and economic world'; and the UNDP's new Administrator, Mark Malloch Brown, sees the *Report* as the organisation's 'crown jewel' (1999 *Report*, page v).

But David Henderson, former head of the Economics and Statistics Department of the OECD, has recently described the HDR 1997 as a 'badly flawed document' which offers a false perspective on world affairs ('False Perspective: the UNDP View of the World' in *Facts and Fancies of Human Development*, Academy of the Social Sciences in Australia Occasional Paper Series 1/2000, forthcoming). Among many 'excesses, deficiencies and misrepresentations' of the HDR, Henderson referred to its 'irresponsible and unprofessional treatment of statistical evidence' and drew attention to my review on HDR 1998 (Ian Castles, 'The Mismeasurement of Nations: A review essay on the Human Development Report 1998' in *Population and Development Review* 24 (4), December 1998).

This paper follows up my review article. It points to a number of examples of 'unprofessional treatment of statistical evidence' in HDR 1999. These examples show that the statistics of the *Report* cannot be relied upon. I believe that professional statisticians have an obligation to make this known to the world's governments, international organisations, non-governmental organisations (NGOs), the media and the research community.

8) Share of rich countries in world output

'By the late 1990's the fifth of the world's people living in the highest income countries had...86% of the world GDP...' (page 3, and chart on page 2)

- **The correct figure for the late 1990's is 60-65%. In 1996, the UNCTAD secretariat, using data provided by the HDR Office, itself, estimated that the proportion of the world's GDP of the richest quintile of the global population - ranking countries by their real GDP per capita (PPP$) – was 64.4% in 1960 and 63.7% in 1991 (The Least Developed Countries: 1996 Report, page v).**

HDRO Response

The difference between the figures of the UNCTAD secretariat, noted by Mr. Castles, and the figures produced by the HDRO are explained by UNCTAD's choice of using real GDP per capita (PPP$), and the HDRO's choice of using GDP per capita

(US$). Which is correct is a matter of economic judgement, and not statistical objectivity. As such we refute Mr. Castles' claim that (PPP$) represents the "correct" figures. Our reasons for choosing GDP per capita (US$) were put by Richard Jolly (Special Advisor to the Administrator, UNDP) in his address to the Statistical Commission (2 March 2000):

> "As with many other statistical matters, there is no one correct answer. Which is the best statistic depends on the question being asked. For assessing comparative living standards, the use of PPP$ per capita is better-and for this reason, the HDI uses PPP$ per capita estimates as one of its components... However, for assessing marginalization of countries, GDP (US$) is often more appropriate - as in 1999 when one of our main themes was the marginalization of the poorest and least developed countries in global trade and global bargaining power relations. For instance, the reason why more than a dozen of the poorest countries are not even represented in the main negotiations of the WTO, directly relates to the cost of maintaining a mission in Geneva, where the main negotiations take place. The costs of hotels and salaries in Geneva, I need hardly add, must be paid in Swiss francs, not in PPP$ dollars.'

As Richard Jolly underlines, the HDR has always accepted the validity of GDP per capita (PPP$) as a measure of comparative living standards.

Apart from the theoretical reasons for using GDP(US$), there are also serious practical considerations relating to the use of PPP$ estimates. The United Nations' *Trends in International Distribution of Gross World Product, 1993* (United Nations Statistical Division, 1993, pages 25-26) states:

> 'The lesser inequality implied by the shape of the curves based on PPPs as compared with the curve based on other conversion rates is partly because PPPs cover only 117 out of 178 countries. Since not one of the missing countries belongs to the richest group and several belong to the poorer half of the world, the inequality of gross world product seems to be smaller.'

The problems are not only related to coverage but also quality. In a paper submitted to the Statistical Commission at the same session in which the HDR was discussed. EUROSTAT pointed out quality problems in the present PPP system, and areas for potential improvements. Among areas mentioned were the need for improved timeliness, improving the comparability of products to be priced within a group, further training to strengthen the use of uniform working standards and best practices, and the need to find output measures for non-market services (such as government expenditure). (*Quality Improvements in the Calculation of the PPPs: Proposals from EUROSTAT*)

Clearly, the lack of reliable data for many countries presents a major practical problem when using real GDP per capita(PPP$). When the HDR1999 was prepared, the World Bank, one leading source of international estimates of PPPs, was in a position to provide

data for only 140 out of 174 countries covered by the Report. Furthermore, trend data are far less available and reliable. The UNCTAD figures, quoted by Mr. Castles, are inevitably based on this limited PPP$ data.

Given the limitations of using PPP and the practical and theoretical reasons for using GDP per capita (US$) in many matters relating to inequality, it is not surprising that GDP per capita (US$) is used by other major institutions. The World Bank and the United Nations use GDP per capita (US$) for fund allocations and classifying countries. Indeed the United Nations in the same publication cited above produces very similar results to the HDR (page 38):

> *"The table* [Table 7, p.37] *clearly illustrates the inequality in the distribution of gross world product. While the share of gross world product of the poorest quarter of the population was between 1.5 and 2.7 per cent, the share of the richest quarter was between 80 and 87 per cent during the last two decades."*

Mr. Castles:

- **The early HDRs gave prominence to a claim that the share of the world's GDP produced by the richest fifth of the global population increased from 70% in 1960 to well over 80% by the late 1980's. The**

claim that the proportion has now reached 86% will not bear scrutiny: its corollary is that the remaining 80% of the world's people produce only 14% of the global output.

- **In fact, a somewhat smaller group – the 75% of global population in 'low income' and 'lower middle income' countries, as defined by the World Bank – produced 63% of the world's cereals and 81% of the roots and tubers in 1995, and were responsible for 44% of the output (and 38% of the consumption) of commercial energy in 1997 (World Bank, World Development Indicators 1995 and 1997).**
- **Six developing countries (China, Indonesia, Thailand, Brazil and Turkey) alone accounted for more over 25% of the world GDP in 1997, according to Angus Maddison's estimates and the databases for the IMF's *World Economic Outlook* and the World Bank's *World Development Indicators*. Yet none of these countries (not to mention most of the rest of Asia, Africa and Latin America) have a place in the world's 'richest fifth'.**

HDRO Response:

These final points focus on the impossibility of the poorest 80% of the world population producing 14% of world GDP. Measured by GDP per capita (US$) not PPP$, the share of global production produced by the poorest 80% is indeed 14%, using the latest World Bank data.

This can be further clarified by addressing the specific points of the final two paragraphs:

1) Although 75% of the world population produce impressive quantities of cereals, roots and tubers, and commercial energy, this does not account for the price of these goods. As we have used GDP per capita (US$) our calculations value them at US (and not PPP$) prices.
2) In fact several developing countries appear in the richest fifth when ranked by income per capita in US$. This includes: Antigua and Barbuda, Argentina, Brazil, Chile, Hong Kong (China, SAR), the Republic of Korea, Saudi Arabia, Seychelles, St. Kitts and Nevis, Taiwan (China) and Uruguay.
3) The GDP(US$) of China, Indonesia, Thailand, Brazil, and Turkey is only 8% of the world total. (Table 12, HDR1999 – N.B. 'World' total refers only to the 174 HDR countries where data was available).

Mr. Castles:

9) Share of poor countries in world output

'By the late 1990s...he bottom fifth [of the world's people] had just 1% of world output...' (page 3, and chart on page 2)

- **Allowing for difference in price levels between countries, the proportion of output produced by the bottom fifth is now about 4%. It was 3.6% in 1991, according to the UNCTAD estimate cited above.**

HDRO Response:

Whereas point 1 discussed the richest fifth having 86% of world GDP, this point discusses the poorest fifth having just 1% of world output. As in point 1, using a GDP(US$) measure of output, the share of the poorest fifth in world output is 1%.

Mr. Castles:

- **In HDR 1999 itself, the 'Least developed countries' (LDCs), with about 10% of the world's people (Table 16, page 200) are shown as having as average real GDP per capita (PPP$) equivalent to 15.7% of the world average in 1997 (Table 1, page 137).**
- **This means that the 'poorest 20%' of the world's population must produce more than 3% of the global GDP, even if those in this group who are not in LDCs are just as poor as those who are.**

HDRO Response:

Once again Mr. Castles uses GDP(PPP$) for his calculations, while the HDRO used GDP(US$). When using GDP (US$), many LDCs are *not* in the bottom fifth, while some non-LDC countries do fall into the poorest 20% category. For example, India, a non-LDC country, accounts for more than one-third of the population in the poorest 20%. An additional 10% of the population in the poorest 20% is accounted for by Nigeria, another non-LDC. Therefore the LDC aggregate of GDP per capita, even if it were in US$, would not be entirely relevant for this calculation.

Mr. Castles:

10) Gap between the rich and the poor

'Today, global inequalities in income and living standards have reached grotesque proportions. The gap in per capita income (GNP) between the countries with the richest fifth of the world's people and those with the poorest fifth widened from 30 to 1 in 1960, to 60 to 1 in 1990, to 74 to 1 in 1995' (pages 104-5).

- **These claims were first made in HDR 1992, and were rebutted in the UNCTAD report already cited.**

- **Estimates of real GDP (PPP basis) in successive HDRs suggest that the ratio of the top fifth to the bottom fifth, ranked by country averages, was about 12:1 in 1960, 18:1 in 1990 and 16:1 in 1997.**

HDRO Response:

This also reflects Mr. Castles' use of GDP(PPP$), rather than GDP(US$). UNCTAD did not, of course, "rebut" HDRO's calculation, any more than UNSD's publication confirms it. They are different calculations, each relevant for different purposes.

Mr. Castles:

- **All experts agree that estimates which disregard differences in price levels cannot validly be used in comparisons of 'living standards' or of 'human development'.**

HDRO Response:

We have agreed that 'living standards' are better measured by GDP (PPP$) than (US$), a point also made clearly in Richard Jolly's statement to the Statistical Commission (2 March 2000).

To the HDRO, gaps in both "global inequalities" and global "living standards" are grotesque. See, for example, HDR1998 where gaps in consumption levels between the richest and poorest countries were described in terms of volumes of goods consumed such as kg of meat.

Mr. Castles:

- **In any case, the HDR figures are internally inconsistent. The ratio of 74 to 1 is said to relate to 1997 in the 'Overview' to the 1999 *Report* (p. 3), and to 1995 in the main text of the same *Report* (page 105); yet in the 1998 HDR, the 1995 ratio was put at 82 to 1.**

HDRO Response:

There is a typographical error in the HDR1999. The referenced year on page 105 should have read 1997, and not 1995. The figure for 1995 in the HDR1998, however, is correct.

Mr. Castles

11) State of Human Development in the LDCs

'The marginalization of the least developed countries continues, accelerating as a result of the Asian crisis' (page 105).

- **There have been wide differences between the LDCs in their rate of human development in recent years.**
- **Estimates by the IMF staff published in *World economic Outlook: September 1999* indicates that real GDP per head in the LDCs as a group (which is very low in absolute terms) has been growing faster than in the 'Group of 7 (G7) major industrial countries. This will be true in the year 2000 for the sixth successive year. Allowing for the increase in the total population of the LDCs, estimated by the UN at 2.5% annually, the IMF estimates imply that the real GDP per head of the LDCs increased in 1995 by 3.7% (G7, 1.6%); in 1996 by 3.1% (G7, 2.3%); in 1997 by 2.5% (G7, 2.3%); in 1998 by 2.0% (G7, 1.7%); in 1999 by 2.7% (G7, 2.0%); and in 2000 by 2.8% (G7, 1.9%).**
- **UNESCO data show that, between 1985 and 1996, gross education enrolments in the LDCs increased by 48% at the first level of education, 55% at the second level and 70% at the third level. (UNESCO *Statistical Yearbook 1998*, p.2-12).**

HDRO Response:

The Human Development Report has long argued that many poor countries are marginalized in the world economy. Statistics have often been used to underline this point. For example, the income shares outlined in points 1, 2 and 3 of this document, or the fact that for some 60 countries income per capita fell between 1980 and 1997 (see point 10 of this document), or that in 1997 the richest 20% of the worlds population represented over 90% of the internet users (HDR 1999). The examples go on.

While Mr. Castles quotes recent increases in the real GDP per head of the LDCs as a whole (as well as increases in enrolment), this does not refute the overall picture of the marginilisation of many poor countries. Unfortunately the cited IMF publication (*World Economic Outlook: October 1999*) does not provide levels of GDP per capita, but only growth rates. However, the United Nations' *World Economic and Social Survey 1999* (pages 261-264) presents similar figures to the IMF. They show growth rates of real GDP per capita in 1998 of 2.8% for LDCs and 2.0% for their 'developed economies'. Applying these rates to their levels of real GDP per capita for 1998 (1993$) of $258 for LDCs and $25,649 for the developed economies, it would take almost 600 years for the LDCs to catch up.

It is also worth noting that we are not alone in our views of marginalisation:

'After two decades of almost continuos economic decline, Africa is now enjoying a recovery...However, even if the growth of the past three years in Sub-Saharan Africa (SSA) could be sustained in the coming decade, that would not reverse the

marginalization of the region...and would do little more than recover the ground lost during the past two decades.' (Rubens Ricupero, Secretary General of UNCTAD's Trade and Development Report 1998 (page XI))

The statement that the marginalisation "accelerated as a result of the Asian crises" was based on the theory that the Asian crisis would result in a reduction of world trade leading to worsening terms of trade for many poor countries. This argument was outlined in chapter 1 (page 41), with the use of some statistical examples. Among these examples were data from UNCTAD's *Trade and Development Report 1998* (pages 42-45 – also mentioned in point 8 of this document). UNCTAD outlined the effects of the expected reductions in world trade, through the impact it would have on export prices, export earnings, and ultimately on GDP. Those expected to be particularly hard hit were producers of primary products, and with export sectors large relative to the size of the economy.

History has shown the Asian crisis to have been less serious, in many ways, than was being predicted at the time. The publication cited by Mr. Castles was published too late for inclusion into the HDR1999, whose deadline for changes was March 1999.

In any event, the sentence quoted by Mr. Castles from HDR1999 stated fact and causality, without simultaneously backing it up with statistical evidence. This statement belonged in chapter 1 along with other analysis of the Asian Crisis, where statistical evidence was shown. While the analysis in chapter 1 was the basis of this statement, it

was appropriately much less certain about the complexities and predicted effects of the Asian crisis.

Mr. Castles:

12) Rate of Growth of Output in LDCs

Average GDP per capita of the LDCs (1987 US$) decreased from $277 in 1990 to $245 in 1997 (Table 6, page 154).

- **These figures cannot be reconciled with the World Bank estimates or IMF World Economic Outlook data, which imply that real GDP per head of the LDCs as a group increased by more than 10% between 1990 and 1997.**
- **The decrease during the 1990s shown in HDR 1999 arises because the HDR Office has not compared like with like. Their calculated average for 1997 excludes one major developed country (Sudan) which was**

included in 1990. As Sudan's average GDP per capita was over three times the average for the LDCs in 1997 (World Bank, World Development Indicators 1999, Table 4.1), the exclusion of this country in 1997 produces a false comparison.

- **Using the HDR's own data, the average per capita GDP of the 30 LDCs for which GDP estimates for both 1990 and 1997 are shown in Table 6 of HDR 1999 increased from $US227 in 1997. The average for these countries plus Sudan (using the HDR estimate of this country's GDP per head and the World Bank estimate of its increase) increased from $US270 in 1990 to $US297 in 1997 (which is consistent with the 10% increase implied in the World Economic Outlook estimates).**

HDRO Response

'Mr. Castles' is referring to the aggregates for GDP per capita of the LDCs, shown at the bottom of table 6. These aggregates were not used for inferences in the text. Indeed one should avoid making any trend assessments based on these aggregates precisely because, as the table shows and as Mr. Castles points out, there are data for more countries for 1990 than 1997.

However, while clear from the body of the table that data for different years refers to different sets of countries, this could have been footnoted more clearly to avoid confusion. The preferable solution is to compile the aggregates using (unshown) estimates for the missing data. The HDR2000 is collaborating with the World Bank (the source for GDP data) to provide aggregates that include estimates for missing data points.

Mr. Castles:

13) Rate of Growth in Output in 'South Asia'

Average GDP per capita in 'South Asia' decreased from $US463 in 1990 to $US432 in 1997 (Table 6, page 154).

- **This comparison is obviously wrong, because all countries in 'South Asia' for which comparative figures for 1990 and 1997 are given in Table 6 (i.e., Bangladesh, India, Nepal, Pakistan and Sri Lanka) show increases in GDP per capita over this period. The only major country for which figures are not given for 1997 (Iran) also increased its GDP per capita over this period (IMF, World Economic Outlook: May 1999, p. 153). The average of six positive numbers cannot be a negative number.**

- **Again the reason for the error in HDR 1999 is a failure to compare like with like: the 1990 average includes Iran, the 1997 average excludes Iran. As this country's average GDP per capita is much higher than in the other countries (especially on the 1987 exchange rate conversion basis used by the HDR Office), its exclusion in 1997 depresses the average for that year and invalidates the comparison.**

HDRO Response

This is the same issue as mentioned in point 5, but referring to the 'South Asia' region. Again these numbers only appear in the aggregates, and are not used for inference by the HDRO.

Mr. Castles:

14) Rate of Growth in Output in 'South Asia (excluding India)'

Average GDP per capita in 'South Asia (excluding India)' decreased from $US709 to $US327 between 1990 and 1997 (Table 6, page 154)

- **Of more than 130 countries for which comparative figures are shown in Table 6, none suffered a halving of their GDP per capita between 1990 and 1997. It follows that such a massive reduction could not**

possibly have occurred in a group of countries with a combined population of almost 400 million.

- **In fact, the changes in average GDP per capita between 1990 and 1997 in the South Asian countries other than India which are shown in Table 6 are as follows: Bangladesh, +22%; Maldives, 14%; Nepal, 18%; Pakistan, +15%; and Sri Lanka, +26%.**
- **Again, the error arises because of a failure to compare like with like: Iran is included in the 1990 average, and excluded in 1997.**

HDRO Response:

This is the same issue as mentioned in points 5 and 6, but referring to the 'South Asia (excluding India)' region. Again, no inference was made by the HDRO using these aggregates.

Mr. Castles:

8) Effect of the Asian financial crisis on other countries

'Angola and Kuwait could...have their GDPs decline by 14-18% [in 1998]...Zambia can expect...a 9% decline in its GDP [in 1998]' (page 40).

- **These estimates, made in a publication released in July 1999, were also shown in Table 1.3 headed 'The Asian crisis hurts distant economies and people' (page 41).**
- **In fact, these declines had not occurred, according to the IMF *World Economic Outlook*: May 1999, released on 20 April 1999.**
- **Angola and Venezuela were estimated in HDR 1999 to have suffered declines in their GDPs in 1998 of 18% and 6% respectively: the IMF estimates published in April 1999 showed no decline at all. The GDPs of Gabon, Nigeria, Mongolia and Chile were estimated in HDR 1999 to have decreased in 1998 by 13%, 4%, 6%, and 3% respectively: according to the IMF staff there were increases of 2-4% in all of these countries. And the estimated decreases in Kuwait and Zambia shown in HDR 1999, of 14% and 9% respectively, compare with estimated decreases of only 2% on the IMF estimates.**

HDRO Response:

The launch of the HDR1999 was in mid-July and the report went to print in late March. For this reason, any publication, such as the IMF's *World Economic Outlook: May 1999*, that becomes available to the HDRO after March cannot be used. It should be remembered that at the time that the HDR1999 was being drafted, the East Asian

financial crisis was still not over and there was a lively debate about its contagion effects to other regions, and its longer term consequences on the world economy. Many organizations were making estimates and projections, and these were being revised frequently. One important issue, which received less attention, was the possible impact on countries that were not directly affected by financial flows, but would suffer nevertheless. It was important to point out that international financial flows were not only matters of concern for the 'big players' but for all countries. HDR thus pointed out the possible consequences for the poorest countries and cited data from a study by UNCTAD, published in the *Trade and Development Report 1998* issued a few months earlier. The HDR99 clearly indicated that these were projections.

The fact that the estimated effects of the Asian Crisis varied over time and between publications is also reflected in the IMF publication cited by Mr. Castles (IMF, *World Economic Outlook:May1999,* page vii), which states:

> *'A number of assumptions have been adopted for the projections presented in the World Economic Outlook... These are of course working hypothesis rather than forecasts, and the uncertainties surrounding them add to the margin of error that would in any event be involved in the projections.'*

Mr. Castles:

9) Growth in GNP per capita in the 1990s

'During the 1990-1997 real per capita GDP [of the world as a whole] increased at an average annual rate of more than 1% (page 22).

- **This is an extreme understatement. Real GDP per capita of the world as a whole increased at an annual rate of 2.2% between 1990 and 1997 (IMF, *World Economic Outlook*: *October 1999*, p. 158 and UN Population Division estimates.**

HDRO Response:

There are differences in the major sources of data on world GDP.

The cited IMF source shows that world output (real GDP) grew on average at 3.3% per cent between 1991 and 1997 (there was no annual data for 1990). The annual average population growth over the same period for the world was 1.3% (UN Population division estimates. N.B. These may not represent the same set of countries). This would imply an annual average growth rate of real GDP per capita of 2.0%.

However other sources give different results.

1) The World Bank's *World Development Indicators 1999.* CD-ROM, gives an annual average real GDP growth of 2.4% a year between 1990 and 1997, with an annual population growth of 1.5% over the same period; this would imply an annual average real GDP per capita growth of 0.9%.
2) The United Nation's *World Economic and Social Survey 1999* gives an annual average growth rate of world output of 2.4% for the 1991-1998 period, increasing to 3% (page 4) when based on (PPP$). Using their estimates of population growth over the same period of 1.4% (page 261), gives annual average real GDP per capita growth rates of 1.0%, and 1.6% respectively. (N.B. 1991-1998 was used instead of 1990-1997 as this was the period for which the UN publication presented the relevant data).

Given the variety of different estimates from different sources, and the varying sets of countries that can constitute the 'World', HDR's statement that real GDP per capita grew globally at "more than 1%" does not seem incongruous with the uncertain statistical evidence.

- **The average annual rate of growth in real GDP per capita in 'developing countries' (IMF definition), with 77.5% of the world's population, was 4.3% between 1990 and 1997 (IMF, *op. cit*, p. 158), compared with a average rate of about 1% per annum for these countries during the**

previous 170 years (Angus Maddison, 'Economic Progress: the Last half Century in Historical Perspective' in Academy of the Social Sciences in Australia, *Facts and Fancies of Human Development*, Occasional Paper Series 1/2000).

Our statement talks of a global average. While there might be large differences in the components of the average, the average as a whole remains valid. In addition the figures for developing countries will also clearly vary according to the source (for example, *the World Economic and Social Survey 1999*, gives an annual average growth of real GDP per capita between 1991-98 of 3.6% for their 'Developing economies').

Mr. Castles' reason for citing the Maddison paper is not clear. This paper has not been made available to the HDRO.

Mr. Castles:

10) Growth in Sub-Saharan Africa, Eastern Europe and the CIS

'Sixty countries have been getting steadily poorer since 1980' (Foreword by Administrator of UNDP, Mark Malloch Brown, p. v).

- **The Administrator appears to have misinterpreted the statement in the body of the Report that 'For 59 countries-mainly in Sub-Saharan Africa and Eastern Europe and the CIS-GNP per capita declined' (p.31).**
- **This statement refers to the net change over the whole period 1980-1996: it cannot be inferred that all of these countries were 'getting steadily poorer' over the period. On the contrary, the GNP per capita of many of these countries increased during 5- or 7-year periods between 1980 and 1997 (Table 6), and the per capita GNPs of most of them increased between 1995 and 1998 (IMF World Economic Outlook: October 1999, pages 169-179).**
- **According to these IMF Staff estimates, the real GDP per capita of 21 of the 27 'countries in transition', and of 35 of the 44 countries in Sub-Saharan Africa, increased in the 1995-98 period (pages 176, 179).**

HDRO Response:

The word 'steadily' is clearly a mistake. However, Mr. Malloch Brown's point was much larger than this one word, and it is worth emphasizing the full context of his words:

"Where I fully agree with the authors [regarding the empowering role of markets] is that this empowerment has been uneven - leaving countries, regions,

ethnic and religious groups, classes and economic sectors the victims of increased inequality. Sixty countries have been getting steadily poorer since 1980"

While the word steadily is not correct, the sentence makes an important and often neglected point. The fact that some 60 countries had lower GNP per capita than they did 17 years previously is very significant. And bear in mind that these are declines from already low starting levels.

As Mr. Castles points out, that the fuller discussion in the text (p.31) of HDR1999 does not make this statement.

Mr. Castles:

11) Life expectancy in countries affected by HIV/AIDS

'A loss of 17 years [in life expectancy] is projected for the nine countries in Africa with an HIV prevalence of 10% or more-Botswana,, Kenya, Malawi, Mozambique, Namibia, Rwanda, South Africa, Zambia, Zimbabwe-down to 49 years by 2010...' (page 42).

- **The statement implies that average life expectancy in the countries reached 66 years (49+17 years) before the onset of the epidemic.**

- **According to UN Population Division estimates (World Population Prospects: the 1998 Revision), none of these countries achieved an average life expectancy higher than 61 years, and in most of them the highest average reached was far lower.**
- **This is not to deny the extreme seriousness of the epidemic, and the significance of the losses in life expectancy projected by the UN.**

HDRO Response:

The HDR was correct in quoting the *World Population Prospects: The 1998 Revision. Volume I* (UN Population Division, 1999. Page 4) stating that life expectancy would drop by 17 years for these countries. The error was in saying that life expectancy would be 47 (not 49, as cited by Mr. Castles) by 2010. In fact, the life expectancy of 47 years refers to the earlier period of 1995-2000, and to all the 29 countries whose life expectancy estimates were affected by the HIV/AIDS epidemic.

As Mr. Castles indicates in his last bullet point the inference made from this data, the seriousness of the HIV/AIDS epidemic, is not changed by incorrectly dating the life expectancy of 47 years.

Mr. Castles:

12) Number of females not expected to survive to age 40

'Nearly 340 million women are not expected to survive age 40' (page 22).

- **Of the 3020 million females in the world in mid-2000, the UN Population Division estimates that 2280 million are under 40 years of age (UN, *World Population Prospects: the 1998 Revision*, p.11)**
- **Of these 2280 million, more than 2200 million (96.5% of the total) are expected to survive to age 40. (This calculation is made by taking the sum of the projected female population aged 40-44 years in 2040, 35-39 years in 2035, 30-34 years in 2030, and so on.) According to the UN estimates, the number of women not expected to survive to age 40 if therefore less than 80 million, not 340 million.**
- **The error in the text of HDR 1999 is probably attributable to the incorrect column heading in Table 4 ('People not expected to survive to age 40 (as % of total population'). This has led the authors to apply the proportion of non-survivors to age 40 for the 'World' (12.5%) to the entire female population.**
- **In fact, the probability of death before age 5 in the world as a whole, both for females and for males, is 8.3% (WHO, *World Health Report 1999*, p.90). The non-survivor proportion of 12.5% from age 0 to 40 shown in the HDR therefore implies a very high probability if survival from age 5 to age 40.**

HDRO Response:

The figure quoted in the HDR1999 was a misinterpretation of the variable. As Mr. Castles points out, the variable was mislabeled and was incorrectly applied to the world population (in this case, the female population). In fact, the variable represents the probability of a person born today not surviving to age 40, given that today's age-specific mortality patterns prevail. It is a synthetic measure and cannot be applied directly to the population to derive valid estimates of number of people who will die between age 0 and 40.

Estimating the number of people who would die before reaching age 40 among those who are under 40 years of age today could be done by surviving each age cohort (i.e., 0-4, 5-9, 10-14, ..., 35-39) to the age group 40-44 on the basis of different age-specific mortality rates, projected for future years. This means that the number of females in age group 0-4 in mid-2000 should be compared with the number of females in age group 40-44 in the year 2040; and the number of females in age group 5-9 should be compared with the number of females in age group 40-44 in the year 2035; and so on. It would then be appropriate to sum up numbers of women in age group 40-44 for the years 2005, 2010, 2015, 2020, 2025, 2030, 2035, and 2040, and compare it with the total number of females 0-40 years of age in 2000.

This seems to be the intention of Mr. Castles. However, instead of summing up the number of women surviving to age 40-44 for different years, as outlined above, Mr.

Castles summed up survivors of the *same* age cohort (0-4 in 2000) at different points in time, and compared this number with the total number of females 0-40 in 2000. This is also not a valid way of estimating the number of women not expected to survive to age 40.

Mr. Castles:

13) Number of people not expected to survive to age 60

'Around 1.5 billion people are not expected to survive to age 60' (page 22)

- **This is another incorrect inference from an incorrect column heading (Table 5, 'People not expected to survive to age 60 (as % of total population').**
- **The UN Population Division estimates imply that the number of people now living who will not survive to age 60 is about 750 million, not 1500 million.**

HDRO Response:

This issue follows exactly the same lines as point number 12, the response, therefore, is also the same.

Mr. Castles:

14) Youth unemployment in the OECD countries

'Among the youth [in OECD countries], one in five is unemployed' (page 32)

- **The proportion of youth (persons ages 20-24) in the labour force in industrial countries who are unemployed is 16%, or about 1 in 6 (table 26, page 236).**
- **A footnote to Table 26 correctly notes that the 'total' unemployment rate is related to the labour force, but there is no footnote to indicate that this is also true of the youth unemployment rates cited.**

HDRO Response:

Mr. Castles is correct to point out the inconsistency between p. 32 and the Table 26 (although the indicator refers to people ages 15-24, and not 20-24 as Mr. Castles states). In fact, the statement that one in five youths is unemployed refers to the European Union and not OECD. An editorial error has crept in.

He is also correct to point out the footnote in Table 26, that clarifies the definition of 'youth unemployment', is missing. However, this clarification is indicated in the 'Definitions of statistical terms'.

Mr. Castles:

15) Agriculture as % of GDP in South Asian countries

'In many South Asian countries agriculture accounts for more than 33% of GDP...' (p.94)

- **According to the HDR 1999 itself (Table 12) the only South Asian countries in which agriculture accounted for as much as 33% of GDP in 1997 were Nepal (41%) and Bhutan (38%). The population of these two countries is less than 2% of the population of South Asia.**
- **In Bangladesh, India, Pakistan, and Sri Lanka, agriculture accounted for between 20% and 25% of GDP.**

HDRO Response:

The statement on p. 94 is not consistent with table 12. Of the 6 South Asian countries in HDR1999 with data, only two had an agricultural sector which accounts for more than 33% of GDP in 1997, and the average was 25%.

The point being made was the inadequate contribution of the agricultural sector to tax revenues which was 6%. The inconsistency with table 12 does not alter these conclusions.

Mr. Castles:

16) Combined gross enrolment ratios: use of UNESCO data

'This year's HDI is based on…revised data on…combined gross primary, secondary, and tertiary enrolment rations from UNESCO' (page 128).

- **The resulting significant changes in HDI rankings, which were attributed to revised data on gross enrolments in Table TN1 (pages 164-166), arose because for about 50 countries the data advised by UNESCO had not been used in HDR 1998.**
- **With some exceptions (see below) the HDR Office used the data supplied by UNESCO in HDR 1999. It was this decision by the HDR, and not 'revised data**

HDRO Response:

Rank changes in the HDR1999 were caused by 'revised' data in all four inputs to the HDI: Life expectancy, adult literacy, gross enrolment and income. By far the greatest rank changes were caused by the revised methodology for the treatment of income.

These revisions are fully described on pages128 and 159-167, which deals with methodology and the data. The reason the revised UNESCO data were not used in 1998 was due to revisions of some data by UNESCO which we did not manage to take into account. As stated by UNESCO at the Statistical Commission, this issue, along with others, has been fully discussed directly with them in recent meetings, and we are benefiting from working in close collaboration with UNESCO on all aspects of the data they provide us.

Mr. Castles:

17) Capping of gross enrolment ratio at 100%

HDR 1999 did not report the combined gross enrolment ratio (GER) advised by UNESCO for Australia, Belgium, Sweden, and the United Kingdom. For these countries the reported ratio, which the HDR Office used to calculate the human development index (HDI), was 'capped' at 100% (Table 1, page 134).

- **The decision to cap this ratio shows that the Office does not understand the basis of these figures. The 'gross enrolment ratio' is the number of**

students enrolled in a level of education, regardless of age, as a percentage of the population of official school age...' (page 254, emphasis added).

- **There are large numbers of enrolments of persons who are above official school age in many 'high human development countries', and it is illogical to adjust some of these ratios downwards. The four countries in respect of which the ratio was capped are those in which the number of 'above official school age' enrolments exceeded the number of the 'official school age' population which is not enrolled.**
- **If the HDR Office had not made this error, the country at the top of the HDI ranks in 1999 would have been Australia, not Canada.**

HDRO Response:

The decision to 'cap' the gross enrolment ratio at 100% relates to the formula for HDI which sets the goalpost of enrolment at 100%. It is not a decision to revise in any way the estimates provided, nor to question the validity of the estimates that exceed 100%.

The formula for calculating the HDI (and GDI) are based on goalposts within which achievements in all the components of the index are measured. As the goalposts in enrolment are 0% and 100%, achievements in enrolment above 100% are not counted.

This is same for life expectancy, literacy and income, where achievements are not counted beyond 85 years, 100%, and $40,000 respectively.

This adjustment by the formula does not represent a misunderstanding by the HDRO of gross enrolment, or a mistrust of the data provided to us by UNESCO. The situation where some countries exceed the goalpost is a new problem that has arisen in recent years and needs to be addressed in the context of a review of the goalposts in the HDI methodology.

The first country to exceed 100% enrolment was Canada in HDR1996. Since the HDR1996 the number of countries exceeding 100% enrolment has slowly expanded. Now 4 countries exceed 100% in the HDR1999 with respect to HDI (and 8 with respect to GDI, see point 18).

Despite the fact that this adjustment applies to a small minority of countries, the issue is kept under review within HDRO. Indeed goalposts for life expectancy and income will also soon need to be reviewed.

It is HDRO's policy not to make methodological changes every year, but to cluster our changes (as happened in HDR1999). As such, we plan to review all the methodological issues relating to the human development indices, including the goalposts, at the same appropriate time. The knowledge component will not only be considered in terms of its goalposts. In recent meetings UNESCO were invited to submit

ideas for the development of new education indicators for our consideration, to be discussed in due course.

Mr. Castles:

18) Combined GERs: Gender-related development index (GDI)

For purposes of the GDI table, and in calculating the GDI, the combined GERs for females advised by UNESCO were 'capped' for Australia, Belgium, Canada, Finland, Sweden, and the United Kingdom; and those for males were 'capped' for Australia and Belgium.

- **This procedure is illegitimate, for the reason explained in 17) above.**
- **Serious distortions are introduced into the gender-related development index as a result. In the case of the United Kingdom, for example, the combined GERs reported by UNESCO were 109% for females and 99% for males. For purposes of the GDI, HDR 1999 reported that the United Kingdom ratios were 100% for females and 99% for males.**
- **Although the ratio of females to males in UK enrolments was greater than in any other country, the basis upon which the GDI values were calculated assumes that the ratio of females to males is greater than in the United Kingdom, in 47 countries: Canada, Norway, the United**

States, Sweden, Iceland, France, Finland, Denmark, New Zealand, Italy, Ireland, Spain, Israel, Brunei Darussalam, Portugal, Bahamas, Slovenia, Kuwait, Bahrain, Argentina, Uruguay, Qatar, Slovakia, United Arab Emirates, Hungary, Venezuela, Panama, Estonia, Malaysia, Cuba, Belarus, Lithuania, Bulgaria, Samoa (Western), Russian Federation, Kazakhstan, Philippines, Ukraine, Kyrgyzstan, Azerbaijan, Moldova, Honduras, Namibia, Mongolia, Nicaragua, Botswana and Lesotho.

HDRO Response:

This point is the same as that made in 17 but with respect to the GDI rather than the HDI. The HDRO response has been outlined above. It is worth noting that while there is a distortion between UK enrolments and the 47 countries listed above, that is not to say there are distortions between those 47 countries

Mr. Castles:

19) Meaning of gender-related development index

'The closer a country's GDI is to its HDI, the less gender disparity there is in the country. But the GDI for every country is lower than its HDI, implying that there is gender inequality in every society. For 43 of the 143 countries, the GDI rank is lower than the HDI rank, revealing the unequal progress in building women's capabilities compared with men's. (p.132)

- **The HDR Office has misinterpreted the GDI results. The GDI is silent about whether the 'unequal progress' has been 'in building women's capabilities compared with men's' or *vice versa*.**
- **Comments in previous *Reports* that 'no society treats its women as well as its men' (HDR 1997, p. 39) and that 'The human development achievements of women fall below those of men in every country' (HDR 1998, p. 31) reveal a similar misconception.**

HDRO Response:

The GDI, as its name denotes, reflects inequality by gender, not the direction of the inequality.

HDR's statement assumes that where there is inequality between men and women, women would generally represent the group that is discriminated against. Although this can't be shown directly with the GDI, the fact that in 32 of the 43 countries

cited, women had lower levels of all inputs into the GDI, other than life expectancy, shows that the general inference of this statement is correct.

- **Gender-specific indices can readily be calculated from the data in Table 2. They show that for such countries as the Russian Federation, Belarus, Estonia, Latvia, and Lithuania, the female-specific index is higher than the male-specific index. This is mainly because, in these countries, the average life expectancy at birth of women exceeds that of men by a much larger margin than the difference of five years which the HDR Office allows 'to account for the fact that women tend to live longer than men' (p.160).**

HDRO Response:

Although this bullet point does not question our use of statistics, two comments can be made regarding the gender specific indices created by Mr. Castles from the data in table 2 (page. 140)

1) Although indices cited by Mr. Castles show the average level of human development achievement for men and women separately, they fail to take into account a society's aversion to that inequality. This aversion to inequality is specifically included in the GDI to make it a more rounded index

of gender inequalities in society. How this aversion to inequality is weighted is clearly a subjective matter, and not one of statistical objectivity.

2) Mr. Castles' statement "*the difference of five years which the HDR Office allows 'to account for the fact that women tend to live longer than men'*", may falsely give the impression that the GDI caps the difference between male and female life expectancy at 5 years. This is not the case. The goal posts for male and female life expectancy are established 5 years apart (at 87.5 years for women and 82.5 for men at the higher level, and 27.5 years for women, and 22.5 years for men at the lower level), to account for the fact that women tend to live longer than men.

Mr. Castles:

20) Relationship between GDP growth and human development

'Even though there is a strong link between trade and growth, there is no automatic link with human development...Egypt and Pakistan achieved...per capita income growth of more than 3% in 1985-97, yet both still have far to go in human development.'

- **The relevant comparison with growth in income is with the improvement in human development, not with its absolute level.**

- **In fact, Egypt and Pakistan, did not achieve per capita income growth of more than 3% annually in 1985-97: the growth rates implied in the data provided in HDR 1999 itself (Table 6) are 1.7% per annum for Egypt and 2.5% per annum for Pakistan.**
- **Yet there was rapid 'human development' (as measured by the HDI) in both countries in the 1985-97 period. HDR 1999 itself lists Egypt, after Indonesia, as the 'low human development' country which achieved the fastest progress (after Indonesia) in these years (p.130).**

HDRO response

When comparing economic growth and human development over the same limited period, the relevant comparison is between growth in income and progress in human development. However, when a country has achieved growth in income over a long period (as in this example), it is certainly also valid to consider the absolute value of human development in relation to this economic growth. After such a period of growth one could expect a high absolute level of human development, otherwise one can conclude that the benefits of growth have not been sufficiently translated to the lives of people.

As such, the statement that a country "still has far to go in human development", does not contradict the fact that a country may have made rapid progress in human development; rapid progress clearly does not imply that the 'end' has been met. Despite

the fact that Egypt had the second fastest progress over the 1975-97 period of the low human development countries (according to the shortfall reduction calculation), it has an HDI of 0.616, and lies 120th in the HDR world rankings. Pakistan in particular is only just above the "low human development" level. (HDR1999)

Mr. Castles is correct in pointing out the inconsistency in the growth rates of Egypt and Pakistan for the period 1985-97. The growth rates for the period 1975-1997, are 3.6% and 2.9% for these two countries respectively (table 7, p.157). Therefore, the data in the text appear to be referring to a different, longer, time period. This inaccuracy in the data is regrettable, and confuses the issues being outlined in the text. However, the basic inference can be made perhaps more strongly for these countries when using the correct data. While Egypt and Pakistan grew over a *22 year* period at 3.6% and 2.9% respectively, their HDIs are only 0.616 and 0.508 respectively. It certainly seems valid to state, on this evidence, that despite long term rapid growth "both still have far to go in human development".

Mr. Castles:

- **The analysis in HDR 1999, and particularly in Table 4.1 on page 85, shows that the HDR Office has been led into error by the index upon which it places such store.**

- **Specifically, the 'stronger links' between economic growth and human development which the Office believes to be established for some countries (Singapore and Hong Kong SAR) merely reflect, for these countries with high HDIs, the dominating influence of rapid per capita income growth in their percentage 'reduction in human development index shortfall'. The argument is circular.**
- **Conversely, there are no grounds for asserting that there are 'weaker links' between economic growth and human development in the case of countries with relatively low HDIs such as Pakistan and Egypt. It was these countries, rather than Singapore and the Hong Kong SAR, which achieved rapid human development in the education and life expectancy components of the HDI in the 1985-97 period. The HDI obscures rather than reveals the relative progress of countries in human development.**

HDRO response:

Three points need to be borne in mind when considering these comments. First, the HDI contains three components, of which income is only a third. Secondly, income is treated logarithmically such that increases have a reduced impact on HDI at higher levels. Thirdly, this analysis deals not with changes in the HDI, but rather changes in the shortfall reduction of the HDI.

While there will always be an element of correlation in comparing changes in HDI to changes in income, the results of such analysis need not be circular. Specifically, when comparing countries with good rates of economic growth, but divergent human development performance, the impact of the growth is effectively controlled. The simple illustrations in the text intend to make this point, while many countries had good rates of economic growth, not all had large reductions in HDI shortfall.

In the case of Singapore and Hong Kong (China SAR), while the increases in GDP per capita (PPP$) were large, there were also significant increases in the other HDI components. Hong Kong (China SAR) had a shortfall reduction of 28%, 39%, and 7% for life expectancy, adult literacy, and gross enrolment respectively, between 1985-1997. Singapore had reductions in shortfall of 35%, 40%, and 33% for the same indicators over the same period (this data is that used by the HDRO to calculate the HDI trend between 1985-1997).

It was never asserted that there are weaker links between economic growth and human development in the case of countries with relatively low HDIs. Furthermore, the progress of Egypt was never compared to its growth rate and was not an example of a country with weaker links. The countries considered to have weaker links were Pakistan and Uganda. As the table mentioned shows (HDR1999, page 85). Pakistan and Uganda had shortfall reductions in HDI between 1985 and 1997 of 17% and 5% respectively. This compares with 45% and 33% for Hong Kong (China SAR) and Singapore.

In terms of the non-income components, Hong Kong (China SAR) and Singapore had shortfall reductions of 28%, 39%, 7%, and 35%, 40%, 33% in life expectancy, adult literacy and gross enrolment respectively. Pakistan and Uganda had shortfall reductions of 23%, 17%, 26%, and –8%, 27%, 3% respectively in the same components. This clearly shows that Uganda was a weak performer, and that Singapore outperformed both Pakistan and Uganda. However, in the non-income components Hong Kong (SAR) and Pakistan are not clearly differentiated; detailed disaggregation shows that Pakistan was not a clear example of a country with weaker links.

As the HDI is a summary proxy of human development achievement, measuring progress through the HDI gives information only on the average progress in the components of the HDI. It has always been maintained by the HDRO that to human development achievement in more detail, various human development indicators need to be considered individually.